THE

ARCHITECTURAL MAGAZINE.

DECEMBER, 1835.

ORIGINAL COMMUNICATIONS.

ART. I. *Plan, Elevation, Section, &c., with a descriptive Account of the Improvements lately made at the Custom-House, New York.* By WILLIAM ROSS, Esq., Architect at New York.

THE whole of this building, which is now in the course of erection in the city of New York, is to be of white marble, and your readers may, therefore, fancy that it must be splendid; but, were they to see it, they would have no hesitation in saying that Bath stone is much to be preferred, as the marble is left rough from the chisel. The value of marble here is chiefly in the fine polish of which it is susceptible; and, when it is not polished, it is no better than any other stone.

The windows in the exterior are in two tiers; they are each 10 ft. high, and 5 ft. wide, and set in a space of 7 ft. 9 in., which is the clear of the pilasters: the latter are 4 ft. 10 in. on the face, and project 3 ft. from the wall. The mode of forming the vaults of the apartments *q q*, in the section, is the same as that employed in forming the ceiling of the rooms next to Pine Street. This mode I shall particularly describe at a future time, as it is peculiarly adapted for London or other shop fronts. The long flight of "shelf-like steps," to the Wall Street front, I proposed to arrange in the same manner as those of the portico of the London University; but this proposition was overruled, as that manner was considered "not to possess dignity enough."

Fig. 222. is the principal plan of the building.

Fig. 223. is a transverse section through the great business-room, on the line A B, *fig.* 222. In this section are seen the vaulted apartments under the principal floor; the galleries (*p p*), supported by trusses; and the apartments (*q q*) in which the papers are to be preserved.

Fig. 224. is a perspective view of the building.

Fig. 226. shows the interior finishing of the two large doors entering to *b* and *g*.

Fig. 225. is the profile of *fig.* 226.

222

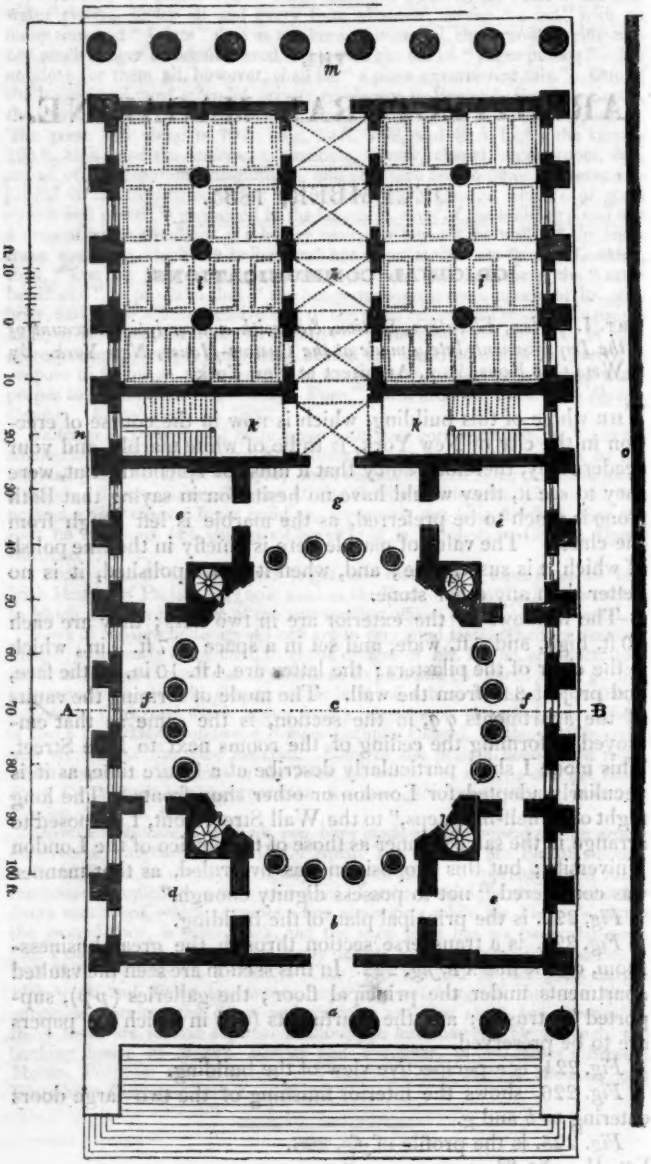
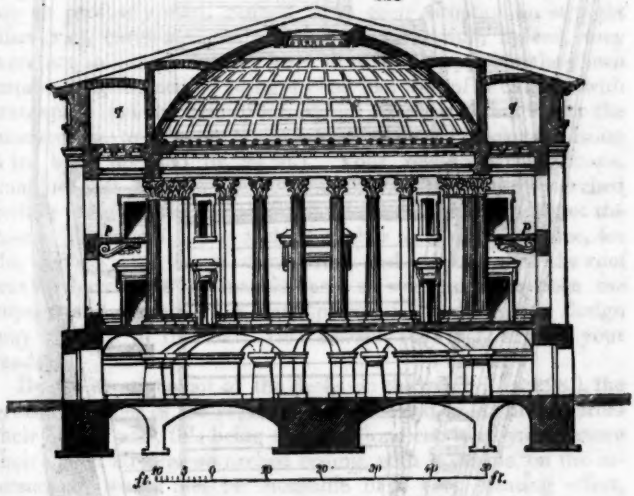


Fig. 227. shows the tracing round the windows which open into the great business-room, and light the winding staircases.

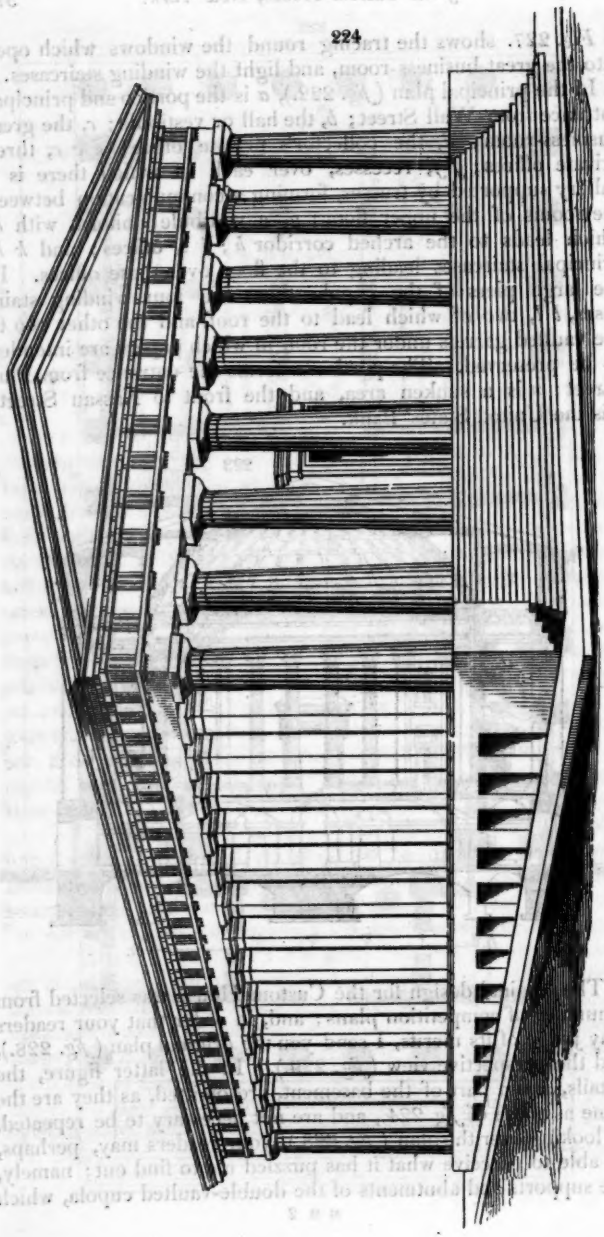
In the principal plan (*fig.* 222.), *a* is the portico and principal entrance from Wall Street; *b*, the hall or vestibule; *c*, the great business-room; *d*, the collector's private office; *e e e*, three private offices; *f f*, recesses, over each of which there is a gallery supported by trusses, forming a communication between the rooms of the upper floor; *g*, a vestibule uniform with *b*, which leads to the arched corridor *h*; *i i*, offices; and *k k*, principal staircases leading to the floor over these offices. In the large piers of the cupola there are four winding staircases, *l l*, two of which lead to the roof, and the other two to the vaulted garrets under the roof, in which papers are intended to be preserved. The portico *m* forms the entrance from Pine Street; *n* is a sunken area, and the front to Nassau Street; *o* is the United States' Bank.

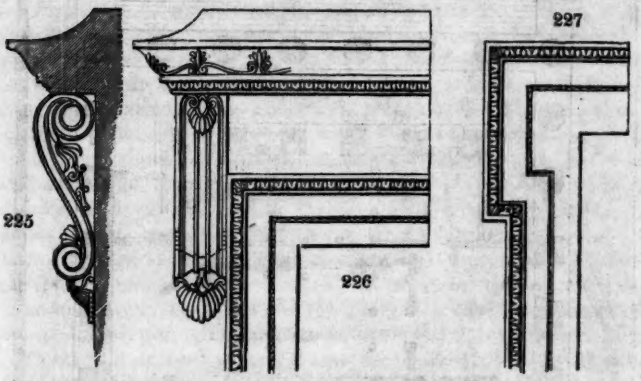
223



The original design for the Custom-House was selected from a number of competition plans; and, in order that your readers may judge of its merits, I send you the original plan (*fig.* 228.), and the perspective view (*fig.* 229.). In the latter figure, the details, and a part of the basement, are omitted, as they are the same as those of *fig.* 224., and are not necessary to be repeated. In looking over the plan (*fig.* 228.), your readers may, perhaps, be able to perceive what it has puzzled me to find out; namely, the supports and abutments of the double-vaulted cupola, which

224

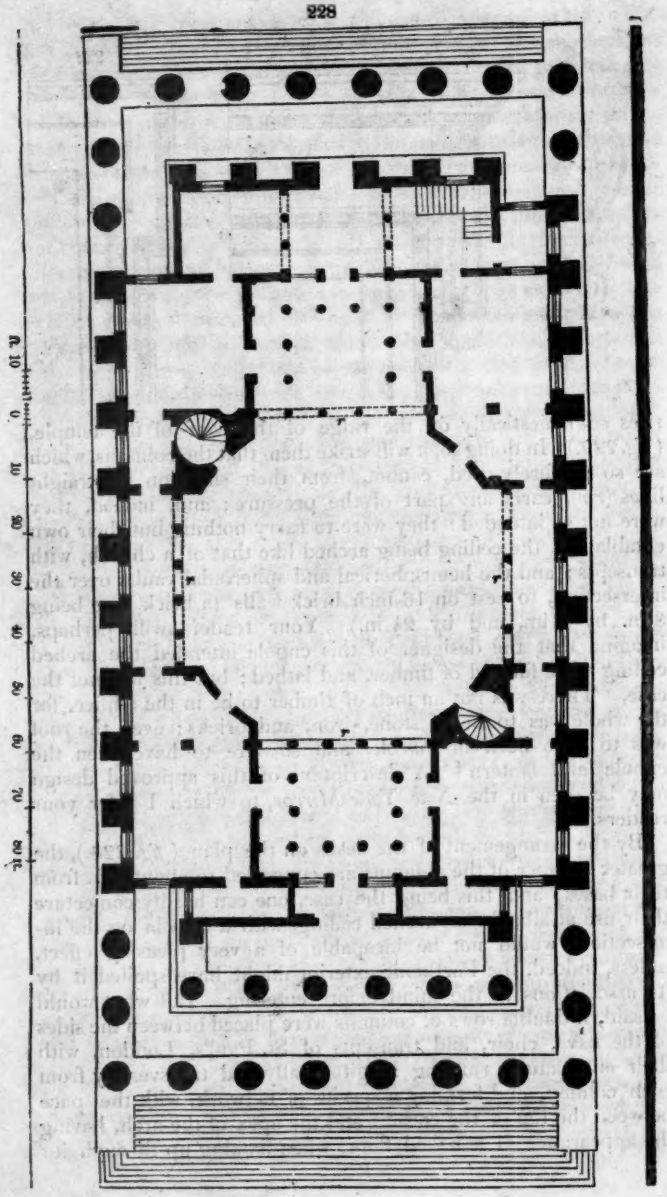




rises so majestically on the ridge of the roof of the temple. (*fig.* 229.) In doing so, it will strike them that the columns, which are so profusely used, cannot, from their situation in straight lines (*r r*), carry any part of the pressure; and, indeed, they were not so intended: they were to carry nothing but their own entablature, the ceiling being arched like that of a church, with transepts; and the hemispherical and spheroidal vaults over the intersection, to rest on 16-inch brick walls (a brick here being 8 in. by 4 in., and by 2½ in.). Your readers will, perhaps, imagine that the designer of this cupola intended the arched ceiling to be formed of timber, and lathed; but this was not the case. There was not an inch of timber to be in the edifice, for the whole was to be of stone, iron, and bricks: even the roof was to have been of marble, and so were to have been the cupola and lantern! A description of this approved design may be seen in the *New York Mirror*, to which I refer your readers.

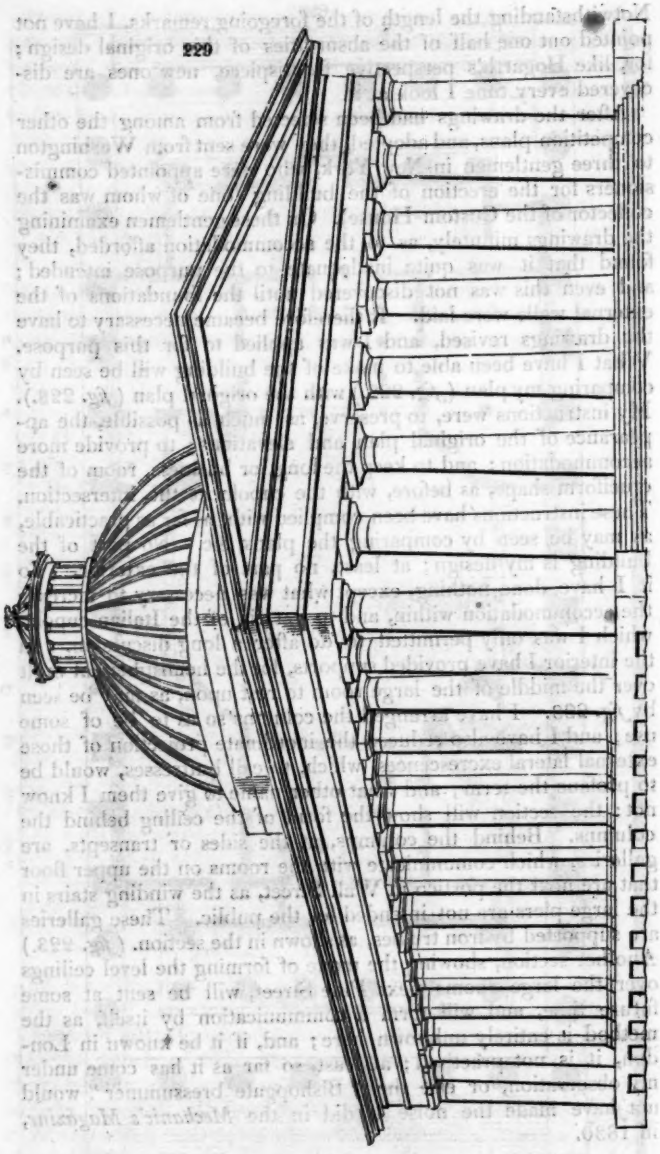
By the arrangement of the desks on the plan (*fig.* 228.), the greater number of the columns are concealed to about 4 ft. from their bases; and, this being the case, one can hardly conjecture their use at all; for an arched ceiling, with a cupola on the intersection, would not be incapable of a very pleasing effect, unless, indeed, the Parthenic exterior might have spoiled it by its associations in the mind before entering. But what would be said, if double rows of columns were placed between the sides of the nave, choir, and transepts of St. Paul's, London, with their entablatures running longitudinally and transversely from each column, and forming a species of network, with the space between the top of the cornice and the apex of the arch, having the appearance of a naked floor, when looking up through it?

228



Notwithstanding the length of the foregoing remarks, I have not pointed out one half of the absurdities of this original design; for, like Hogarth's perspective frontispiece, new ones are discovered every time I look at it.

After the drawings had been selected from among the other competition plans, and adopted, they were sent from Washington to three gentlemen in New York, who were appointed commissioners for the erection of the building (one of whom was the collector of the Custom-House). On these gentlemen examining the drawings minutely, as to the accommodation afforded, they found that it was quite inadequate to the purpose intended; and even this was not discovered until the foundations of the external walls were laid. It therefore became necessary to have the drawings revised, and I was applied to for this purpose. What I have been able to make of the building will be seen by comparing my plan (*fig.* 222.) with the original plan (*fig.* 228.). My instructions were, to preserve, as much as possible, the appearance of the original plan and elevations; to provide more accommodation; and to keep the long, or business, room of the cruciform shape, as before, with the cupola at the intersection. These instructions have been complied with, as far as practicable, as may be seen by comparing the plans, &c. No part of the building is my design; at least, no part of the exterior. To it I have done nothing, except what was necessary to increase the accommodation within, and to get rid of the Italian cupola, which I was only permitted to do after a long discussion. In the interior I have provided supports, for the hemispherical vault over the middle of the large room to rest upon, as may be seen by *fig.* 223. I have arranged the columns so as to be of some use; and I have also reduced the inordinate projection of those external lateral excrescences, which, to call buttresses, would be to profane the term; and what other name to give them I know not: the section will show the form of the ceiling behind the columns. Behind the columns, at the sides or transepts, are galleries, which communicate with the rooms on the upper floor that are next the portico in Wall Street, as the winding stairs in the large piers are not intended for the public. These galleries are supported by iron trusses, as shown in the section. (*fig.* 223.) Another section, showing the mode of forming the level ceilings over the large rooms next Pine Street, will be sent at some future time, and will form a communication by itself, as the method is entirely unknown here; and, if it be known in London, it is not practised; at least, so far as it has come under my observation, or else the "Bishopgate bressummer" would not have made the noise it did in the *Mechanic's Magazine*, in 1830.


229

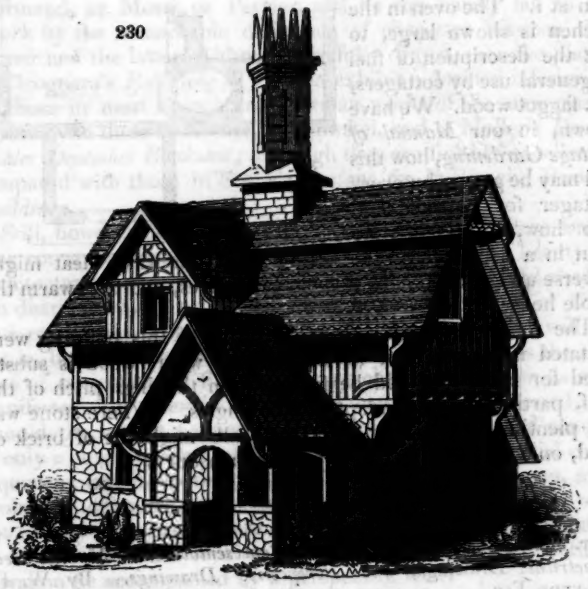
The mode which I proposed of warming and ventilating the building has been set aside: there is now to be a stove in the cellars for every room that is to be warmed, and ventilation is left to chance.

New York, March 14. 1835.

ART. II. *Perspective View and Ground Plan of a Cyclopean Cottage.* Designed by WILLIAM WELLS, Esq., and erected on his Estate at Redleaf in Kent, as a Residence for an Under-Gardener.

THE term Cyclopean, as here used, applies only to the lower part of the walls of the cottage (*fig.* 230.), which are formed of irregular blocks of sandstone, without the slightest indication

230

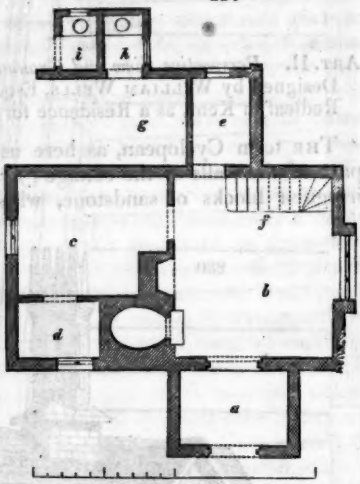


of horizontal or vertical courses. The effect, as contrasted with the numerous straight perpendicular lines formed by the studwork in the upper part of the walls, and with the horizontal lines of the roof, is exceedingly good. The studwork is filled in with brickwork plastered over; the smoothness and finished appearance of which, as contrasted with the rudeness of the Cyclopean part, is forcible, and at the same time pleasing.

A great beauty in this cottage results from the horizontal

division of the main body of the roof; the upper part of which projects slightly over the lower part. The chimney top is massive, and original. The whole was executed by a local carpenter and mason, from the sketches of Mr. Wells, out of timber and stone produced by the estate.

231



The plan (*fig.* 231.) contains a porch (*a*), kitchen (*b*), parlour (*c*), light closet (*d*), pantry (*e*), a staircase (*f*) to two good bedrooms above, and to a cellar under the parlour below; also an open shed (*g*) for fuel. A privy for women and children is at *h*, and one for men at *i*. The oven in the kitchen is shown large, to suit the description of fuel in general use by cottagers, viz. faggot wood. We have shown, in our *Manual of Cottage Gardening*, how this fuel may be grown by every cottager for himself; and also how, by placing the oven in a cellar under the sitting-room, the waste heat might traverse under the kitchen floor in brick flues, and thus warm the whole house.

The roof is covered with pantiles; but if this building were imitated in America, or in any country where wood is substituted for tiles, it would be found, from the high pitch of the roof, particularly well adapted for shingles. Where stone was not plentiful, the lower part of the walls might be of brick or mud, on a foundation of brickwork or masonry.

ART. III. *Modes of Architectural Representation: — Models, Geometrical Drawings, and Perspective Drawings.* By W. H. LEEDS, Esq.

(*Continued from* p. 459.)

ELEVATIONS do not afford so much matter for remark as the preceding class of drawings, save in regard to the degree of effect attending the different modes of executing them; the same features being shown one way as another. For engraving architectural subjects of this description, *outline* has, of late years,

been most generally adopted; and, independently of the economical considerations which recommend it, it certainly possesses one peculiar and important advantage; namely, the extreme precision of form which it admits, and the clearness with which the minutest details can be expressed; whereas, when shadow is added, this perspicuity can no longer be fully preserved; nor can very nice measurements be taken from a shadowed elevation, unless it happens to be executed upon a very large scale, and with more than ordinary attention. Besides positive correctness of form, there are degrees of merit in outline as well as in other modes of engraving or drawing: it may be flat, tame, and insipid; or full of vigour, spirit, and expression. How such difference can take place with mere lines, it is not easy to say; but let any one look at the outlines occasionally given in the older architectural publications, and then turn to those by Normand, or Moses, or Percier, and he can hardly fail to be struck by the remarkable difference of character between the former and the latter. Although carefully drawn, even the plates in Cicognara's *Fabbriche di Venezia* exhibit a decided inferiority to those in most French and German works of the same class; especially to those in Klenze, in Schinkel, and in Moller's *Denkmähler Deutscher Baukunst;* although they are finished excellence compared with those in Soane's *Designs for Public and Private Buildings.*

Still, however desirable outlines are for exhibiting mere form, they convey no idea of what is not less essential to beauty of architectural composition; namely, the effect of light and shade, the distribution and proportion of each, and the variety of tints thus produced. Undoubtedly, the markings of shadows will be put in, by our perceiving how they will be cast: yet, as the degree of projection of the surfaces which occasion them is not manifested, the *quantity* of shadow can only be guessed at. Should the subject happen to be a very simple one, and consist of only a single general plane, this will not be of material consequence: but if, on the contrary, there are several planes, and projecting or retiring divisions in the elevation, the effect will not be fully apprehended, although the circumstance itself should be understood from looking at the plan; unless such outline elevation be accompanied by a perspective view.

Nevertheless, besides that already pointed out, another advantage attending outline is, that it does not require engravings to be upon so large a scale as when shadowed; for, in the latter case, it becomes almost impossible to express the minutiæ at all intelligibly, unless the size of the whole elevation is extravagantly large in other respects. Thus, as much may be accomplished within the compass of a small folio or large quarto plate as would otherwise demand far greater amplitude of space: in fact, the latter size, or a degree smaller,

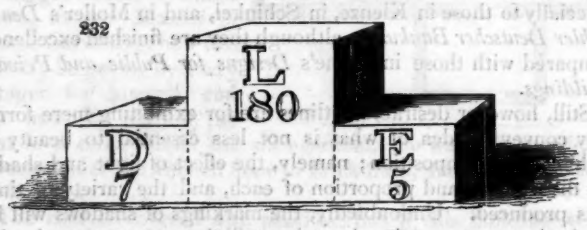
would, in most instances, prove sufficient, even should it occasion the scale to be less than is altogether desirable; because, in addition to elevations showing the entire design, one division of the elevation, or as many as the particular subject might render necessary, could be exhibited at large on separate plates. That the most elaborate subject may thus be completely described, cannot be questioned by any one who is acquainted with Pugin's *Gothic Examples*, a work of extraordinary fidelity, and no less beautiful execution.

(To be continued.)

ART. IV. *An Idea for a Milestone, combining a Resting-Stone for Pedestrians, and a Mounting-Stone for Equestrians.* By J. P.

I SEND you a rude sketch of a milestone (*fig.* 232.), which, in granite, or in any hard stone, would be imperishable and immovable. It would allow room for all necessary information; and would afford a comfortable resting-place for wearied foot-travellers, and a

232

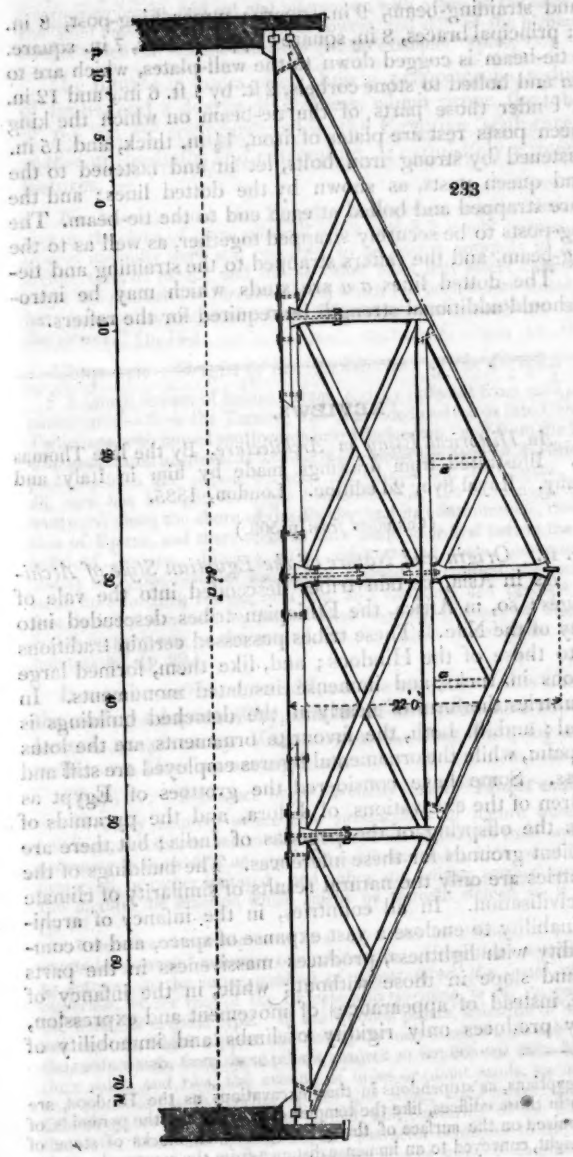


convenient horse-block for equestrians. Three stones, cramped with dove-tailed plugs, and well leaded, would be nearly as strong as one solid block.

Dawlish, Sept. 9. 1835.

ART. V. *An original Design for the Truss of a Roof of large Span.* By G. B. W.

I SEND you a design (*fig.* 233.) for the truss of a roof of large span, viz. 84 ft., being 4 ft. wider than those of old Drury Lane and Birmingham Theatres, which, I think, would be found sufficiently strong for one of so large a size. The height, from the underside of the tie-beam to the top of the ridge-piece is 22 ft.; and the following are the scantlings of the principal timbers:— The tie-beam (in three pieces, scarfed, as shown by the drawing) 15 in. square; principal rafters, 12 in. by 9 in. at bottom, and 8 in. by 7 in. at top; lower king-post, 12 in. by 9 in.; queen-


233
22·0
6·0
70 ft

posts and straining-beam, 9 in. square; upper king-post, 8 in. square; principal braces, 8 in. square; upper braces, 7 in. square.

The tie-beam is cogged down to the wall-plates, which are to be let in and bolted to stone corbels, 2 ft. by 1 ft. 6 in., and 12 in. thick. Under those parts of the tie-beam on which the king and queen posts rest are plates of iron, 1½ in. thick, and 15 in. wide, fastened by strong iron bolts, let in and fastened to the king and queen posts, as shown by the dotted lines; and the plates are strapped and bolted at each end to the tie-beam. The two king-posts to be securely strapped together, as well as to the straining-beam, and the rafters strapped to the straining and tie-beams. The dotted lines *a a* are studs which may be introduced, should additional strength be required for the rafters.

REVIEWS.

ART. I. *An Historical Essay on Architecture.* By the late Thomas Hope. Illustrated from drawings made by him in Italy and Germany. Royal 8vo, 2d edition. London, 1835.

(*Continued from* p. 503.)

CHAP. II. *Origin and Nature of the Egyptian Style of Architecture.* As in Asia, certain tribes descended into the vale of the Ganges; so, in Africa, the Ethiopian tribes descended into the valley of the Nile. These tribes possessed certain traditions similar to those of the Hindoos; and, like them, formed large excavations in rocks, and immense insulated monuments. In both countries the form of nearly all the detached buildings is pyramidal; and, in both, the favourite ornaments are the lotus and the palm, while the ornamental figures employed are stiff and motionless. Some have considered the grottoes of Egypt as the children of the excavations of Ellora, and the pyramids of Egypt as the offspring of the pagodas of India; but there are not sufficient grounds for these inferences. The buildings of the two countries are only the natural results of similarity of climate and of civilisation. In all countries, in the infancy of architecture, inability to enclose a vast expanse of space, and to combine solidity with lightness, produces massiveness in the parts within, and slope in those without; while, in the infancy of sculpture, instead of appearances of movement and expression, incapacity produces only rigidity of limbs and immobility of features: —

"The Egyptians, as stupendous in their excavations as the Hindoos, are far more so in those edifices, like the temples of Thebes and the pyramids of Memphis, raised on the surface of the ground, in which blocks of stone of immense weight, conveyed to an immense distance from the quarry, elevated to

a surprising height, and cut and interwoven with others in the most ingenious and solid manner, imply mechanical powers, and skill of the highest description, of which the Hindoo buildings give no example." (p.10, 11.)

The figures in India often show a preposterous reduplication of limbs, and a degree of stiffness, which prove the infant state of the art of sculpture; while the Egyptian sculpture, though coarse in the limbs and extremities, is exquisitely wrought in the features, —

"But, however much the Egyptian architecture appears thus obliged to give up the claim of more primeval origin, which it would possess if its own evident antiquity were still preceded by an earlier antiquity in the Hindoo architecture, its parent, and, on the other hand, may assert its greater originality; the similarity of circumstances, which has been before stated, seems to have imparted to the architecture of the latter much coincidence with that of the former." (p. 12.)

Chap. III. *Origin of the Architecture of the Greeks.*

"A fourth stream of human beings, equally different from each of the three enumerated — from the Tartars, who descended eastwards into China; and the Thibetians, who flowed southwards into Hindoostan; and from the Ethiopians, who penetrated northwards into Egypt — under the name of Scythians, coming probably from the region between the Euxine and the Caspian, which from all ages has brought forth the handsomest of the human race, advanced westward along the shore of the Euxine and its continuations, through a portion of Epirus, and there seem to have made their first halt in the neighbourhood of Dodona. Finding, on all sides around them, immense forests of stately oaks, possessed of too active a mind to content themselves with a small hole for their retreat, or a tree still standing, and perhaps alive, they first detached a certain number of these vegetable giants from their roots, and laid them prostrate on the ground, ere they again raised them into a single habitation." (p. 20.)

It may be sufficient to add, as the essence of this chapter, that the author adopts the hypothesis of the posts and superimposed beams, as given by Vitruvius, and, after him, by most other writers on Grecian architecture.

Chap. IV. *Influence upon Architecture of Habit and Religion.*

"In every country where new productions of nature were adopted in buildings, the shapes and modifications which had arisen from and were found necessary in those first adopted still continued to be, in those of the new sort, preserved, or rather imitated; and policy and religion seemed even to give to this method the sanction which might be thought denied to it by reason." (p. 23.)

"Religion and worship have, in all ages and conditions of human nature, exerted a powerful influence on architecture. From this universal propensity to retrace, in the latter method of construction, the forms of the earlier materials, we see that of the Chinese still resemble, in all its parts, those of the tents, its original type. In the wooden pillars, destitute of marked bases and capitals, which support the ceilings in such numbers, we see the poles; in the roofs which, from these pillars, project so far, convex alike in their spine, their sides, and ribs, the awning of hides or pliant stuffs, spread over ropes and bamboos; in the curling spikes that fringe their eaves, the hooks and fastenings; in the lowness, and spread, and clustering of the different parts, the whole form, and appearance, and character belonging to the residences of the herdsmen, their ancestors. Chinese houses seem to cling to posts which,

when planted in the ground, have struck root and become fixed. The palaces only look like a number of collected awnings, and the very pagodas, or towers, in their loftiness, are nothing more than a number of tents piled on the top, instead of standing by the side, of each other. The aggregated dwellings, from the smallest village to imperial Pekin itself, in their distribution, resemble nothing but a camp; and when Lord Macartney, after crossing the whole of the Chinese empire, from south to north (from Canton to the great wall, its furthest length), was, on the borders of Tartary, received by the Emperor in a real tent, he scarcely perceived any difference to exist between it and the millions of stationary buildings he had viewed." (p. 24, 25.)

"In the Greek edifice of stone and marble, however large in its dimensions, however sumptuous in its details, the form of the primitive cabin of stems and foliage of trees in which it originated was, to the last era of Greek independence, preserved with the more scrupulous and religious fidelity, because the Greeks conceived this peculiar shape as stamping the truth of that title of Αυτοχθονες, or aboriginal possessors of the soil, on which they set so high a value. The hut of Pelasgus, the last entirely wooden cottage in Arcadia, remained the unvarying model of every subsequent fabric in stone and marble, however stupendous, which arose throughout Greece." (p. 27.)

"So much, indeed, does every style of architecture belonging to a particular race begin by being conformable to the local exigencies and productions, and thence requisite modes of construction, of the regions and climates in which it originates, that should we still, in any country, discover a manner entirely peculiar, wholly original, fundamentally different from those here described, we may be sure that its singularities have at some time proceeded from a temperature, or a locality, or a material, or a system of customs and manners, peculiar to themselves, and altogether different from those of other nations here mentioned." (p. 28, 29.)

"The Greek style alone, as we shall show, not only has continued to live and to flourish to this day, but, from its singular vital force, to show such a number of different successive transformations, that it has assumed a wholly different form; that most people refuse to recognise in its last developements the uninterrupted descent from its first principles." (p. 31.)

Chap. v. *Nature and Character of the different Orders of Grecian Architecture.* Here the author adopts the opinions of Vitruvius, but argues against the prejudice of some modern architects, who follow implicitly that master's rules, without subjecting them to the modifications of time and place.

Chap. vi. *Natural and Adventitious Circumstances by which Grecian Architecture was affected.* The mildness of the climate in Greece permitted much of public and private business to be transacted in the open air, or under open porticoes; and the organisation and habits of the people seem to have produced in them an indisposition to the use of confined receptacles. What these circumstances rendered agreeable, ignorance of the arch, and of the use of glass, rendered necessary.

Chap. vii. *On the Origin of the Arch.* The Cyclopean openings in walls present neither the principle nor the power of the arch, though they may have led to its invention. If the arch was invented in Greece, it was never developed there: —

"To the last, their inability to place any upright supports, whether columns, pillars, piers, jambs, or continued walls, in places where a covered roof was necessary, at a greater interval than a block of stone or beam of wood might span, generated a degree of narrowness and contraction in their

enclosed buildings, and only permitted them to wall in a larger area, on condition of leaving the edifice exposed to the sky. To the last, their want of science produced an enormous consumption of materials in proportion to the space obtained. To the last, the internal forms of their edifices must, with all the elegance that could be applied to their limited combinations of outlines, have displayed a want of height, an angularity, and absence of that curve and swell which enables the arch, and cupola, and vault, to produce equal variety, connection, and harmony." (p. 53.)

Chap. VIII. *Decay of the Architecture of the Greeks, and Progress of that of the Romans.* What the magnificence of Rome demanded, by degrees she acquired means to obtain.

"Whatever edifices were required for utility or for pleasure, in the heart of the capital itself, or in the districts composed of the conglomeration of states once independent, in the secondary seats of a government, whose provinces embraced a far more extensive jurisdiction than had belonged to any of the subjugated nations of which they were composed, such they constructed. Aqueducts, bridges, forums, basilicas, temples, baths, theatres, amphitheatres, stadia, hippodromes, and naumachia, on a scale and with a prodigality which these tributaries never could have contemplated while in a state of independence." (p. 56.)

"As necessity is said to be the mother of invention, probability would assign the very discovery of that useful developement of architecture, the arch, to the Romans, who possessed not, in their vicinity, quarries out of which to cut blocks of stone or marble sufficiently large or sufficiently handsome — who, on the muddy banks of the Tiber, were more frequently compelled to content themselves with brick; rather than to the Greeks, who possessed the finest materials in the greatest abundance.

"Still it is impossible to prove that the Romans were, or that the Greeks were not, the inventors of the arch. We find it displayed on a vast scale in the great cloaca, at a period when, if existing in Greece, it was in obscurity and concealment, but we observe it likewise in ancient Etruria, from whence the Romans appear to have derived all their earliest arts of industry and elegance, in monuments that seem anterior to the construction of the cloaca and the foundation of Rome; and we must confess that at no period the inhabitants of Latium seem to have possessed an architecture which, in its peculiar features, might be called aboriginal and exclusive." (p. 59, 60.)

"Without being able at Rome to arrive nearer to the solution of that question of mere curiosity, where the arch was first invented, the only fact that we can establish, but a fact essential to the history of the progress, and developement, and vicissitudes of Grecian architecture, is, that while the Greeks, in their own country, to the last days of their independence, abstained from rendering the arch an essential and integral part of their architecture, the Romans, whether by right of parentage or adoption, from the first era of their appearance, as a peculiar distinct nation, exhibited this new feature." (p. 61, 62.)

"Skill in mechanics is a faculty wholly distinct from taste in the fine arts: where the latter exists not, or lies dormant, or retrogrades, the other may still advance, still make great and rapid strides. Thence the greater exigencies of the Romans, in respect of architecture, the vaster buildings they had to raise and to cover, soon made them seek all the superior means, and develope all the superior powers, of the arch." (p. 62, 63.)

"This universal adaptation of a more varied developement gave to Roman architecture, from the first, an internal principle of construction, and an external corresponding feature, which had not been previously contemplated, and caused a departure from the elementary model of the Greeks, in reality, in its essence more important, more fundamental, than that which the style since called Gothic exhibited in descent from the manner of the Romans.

"Once admitted into Roman edifices, it soon began to acquire a prevalence

inconsistent with the existence of the essential parts of the Grecian architecture, which were henceforward considered as optional and ornamental expletives and additions. The unbending straightness of the architrave, and the arch curvetting from support to support, the roof with sloping sides, and the rounded cupola, could not subsist together, be seen in the same place, at least as parts equally important.

"Where no beam or rafter existed within, its extremity could not appear on the external surface, under the name of triglyph or dentile.

"Thence the Romans, had they been possessed of a delicate appreciation of the beauties of art, had they been gifted with inventive or imaginative genius, would for their arch have devised some new species of ornamental addition, appearing to belong to its nature and composition.

"But such powers they could not boast. Their minds might be fertile in useful inventions: in those calculated for beauty they were sterile. They were obliged to borrow these from elsewhere, and were not even ashamed of thus confessing their deficiency." (p. 64, 65.)

"The Romans, far from possessing the genius that invents, had not even the taste that discriminates among the inventions of others. They dwelt not, in their study of ornament, on the essential conditions of beauty; they knew not the principle on which it must be founded; they required not in decoration, as in objects of strict utility, that consistency, without which the latter cannot attain their end. With them, the art of producing beauty was called into requisition by ostentation and luxury: guided in their imitation of extraneous architecture by fashion more than taste, they only wanted the semblance of Grecian forms, not the substance of Grecian principles: they were satisfied with fragments and patches, however inconsistently applied and united; nay, they were even prepared to see, in this application and union, new and unseen in Greece itself, only because it was inconsistent, fresh conquests of taste, and combinations of genius, to receive a conglomeration of remnants as new inventions, to admire the proofs of poverty as an increase of riches. Those who, transplanted to a foreign soil, from citizens and rulers, became strangers and slaves, could not, in their fallen state, retain the sentiments, the emulation, of freemen. They naturally began to prefer such a deviation from their painful and sober adaptation of ancient forms to new purposes as should insure to them present employment and profit, and that degree of marketable fame which might conduce to the acquisition of those advantages suited to their fallen condition; nay, perhaps wishing to repay their wrongs on the Romans, by combining, with an open obsequiousness to their most absurd dictates, whatever revenge they could still take of them; and to repay, with secret ridicule, the open insult received from them, were probably even anxious, in lending them their architecture, to employ it in the manner most inconsistent with its original principle, most calculated to prove and expose the ignorance and bad taste of their employers.

"Thus what remained of Grecian architecture became completely bastardised and degenerate in the Roman territory. In the former, the column was a more characteristic and essential feature than the wall, since it supported a greater proportion of the weight, seemed rooted in the deep recesses of the soil like the oak in its native forest, and rose in single stem, continuous in substance and robust in frame, from the surface of the earth to the entablature. Notwithstanding its great individual strength and diameter, it was so approximated to many more of a similar nature, which shared with it the burden of the superincumbent masses, as to give the greatest solidity to the edifice, and to gratify the spectator with the richness and variety of form, combined with the appearance of vigour and durability.

"In the latter, a continuous wall, capable, not only of supporting great perpendicular weight, but of enduring considerable oblique pressure, was an indispensable requisite for the continuous vault, and naturally became an object of greater consequence and attention than columns. These, indeed, needed only to adorn its nakedness, placed too far from the main building to

be embodied with it or to add to its strength, instead of rising directly from the plinth or stylobate, were separated from it, and raised upon a clumsy square block, which, under the name of pedestal, seemed interposed to interrupt the connection between the shaft and the floor; by its size to narrow the passage, and by its protruding angles to inconvenience or to hurt the passengers.

"Frequently, as in the triumphal arches of the emperors, that pedestal became so lofty, that, instead of raising the columns on a sort of cothurnus, it lifted them on a positive stilt, and not only cut off their connection with the ground, but made them appear as if tottering in air. Where the pedestal occupied a greater space between the soffite and the stylobate, less remained for the column, which became shorter, thinner, weaker, requiring, instead of affording, support; its apparent weakness exceeding its real debility, like an appendage not wrought for the building, but borrowed from some smaller structure, and only carried to the requisite height by the aid of materials which did not belong to it. As they became weaker, like the limbs of an unhealthy child, they were stretched to a greater distance from each other, and were no longer capable of bearing an entablature diminished to their own proportions. In order fully to confirm their inutility, they were not made to carry any such, but, of an architrave directly supported by the wall itself (a continuation of that wall, indeed, under a different denomination), such projections or knots as did not exceed their own diameter, and appeared fitter for the purpose of steadying the useless pillar than the pillar for that of carrying an unmeaning entablature. The effect produced was that of a second capital mimicking the first; confusing its form, and destroying its appearance; causing as great a multiplication of breaks and angles, and of clumsy mouldings, as arises from the equally useless pedestal underneath.

"At other times, again, to show the inutility both of the column and the entablature still more evidently, both were, as in the recesses of the Pantheon, placed within an arch totally independent of either; so that the column carrying the entablature, but the entablature carrying nothing, the former only appeared for the purpose of supporting the latter, and the latter for that of tying together the former.

"But of all the parts borrowed from Grecian architecture, that which came to be applied in the way most different from, most inconsistent with, its nature and distinction in the original, was the fastigium, the part which we call the pediment.

"That pediment, which was only the termination of a roof slanting both ways from its central line or spine, of which, throughout its whole length from end to end, the continuity was never broken, which was never seen in Grecian buildings, except on the straight line at the summit, and the gable formed by the extremity of the roof, in Roman architecture frequently appeared as if cut off from all that belonged to it, and grew out of, and was stuck under, the entablature which it should have surmounted, against the upright wall, over a door, a window, or a niche, even as in the temple of Balbeck, placed within a projecting portico; a situation in which it could not be useful even to carry off the wet. Instead of a single, large, and majestic pediment, naturally and magnificently terminating the building, several rows were sometimes seen of these small and inappropriate triangles; and, to complete the inconsistency, they were rendered as unnatural in form as in situation. They were sometimes rounded, sometimes broken, sometimes squeezed within others of larger, sometimes strung round others of smaller, dimensions. Such we see them in the Castello d'Aqua at Rome, the remains of the temple of Diana at Nismes, those of the temple of the Sun at Balbeck (or rather Bahalbeck), and the palace of Dioclesian at Salona.

"In Grecian architecture, the square pilasters only terminated the square pier, or antae of the building; by the Romans it was carried, in shallow slips or slices, along the whole surface of the wall; and, as the tyrant Maxentius

tied together the living and the dead, so the architects of Rome every where attached the round, vigorous, and independent column to one of these flat, weak, and confined pilasters, for no other purpose, that can be conjectured, than that the effect of its tapering form might be destroyed by the straight lines of the pilaster.

"In buildings of a circular shape, of which the Romans had many, not only was the architrave represented as bent in a hoop around its centre, but triglyphs and medallions appeared diverging in radia from that centre to the architrave. In one of the temples of Balbeck, copied at Kew, the entablature, instead of following the convexity of the belt of columns, between each pillar and the next displays a concave semicircular recess.

"The Doric was seldom employed by the Romans in these strange aberrations. Its forms were too inflexible to be susceptible of such modifications. Its name, however, was preserved in an order substituted in its stead, but in which those features which had rendered it most characteristic, and at the same time most intractable, were left out; so that it differed only from the Ionic and the Corinthian in its somewhat greater sturdiness. The Ionic had in its capital the beautiful variety and contrast between the front and side of the volute changed into complete sameness; and the Corinthian lost the peculiarities commemorative of its origin; the acanthus rising round it, until its delicate and graceful tendrils were made to curl down under the superincumbent tile, in enormous volutes, no longer connected with its foliage, or was replaced by a sort of combination of the Ionic and itself, called the Composite, which, instead of being a new creation of genius, gave evidence of poverty to invent, and ignorance to combine. The very ovolo of the Greeks was truncated at its top, and the dentiles scooped out underneath, so as to become a zig-zag. As may be seen in the tomb of Scipio Barbatus, the Doric triglyph was associated with the Ionic dentile; and in the theatre of Marcellus the Doric column was made to support an Ionic entablature. But among all these re-combinations of elements already familiar, we nowhere remark the discovery of any mode of decoration essentially new; and to this day the ornamental forms of ancient architecture are limited to the number exhibited by the Greeks in the days of their freedom.

"Already, under Augustus, who prided himself upon having found Rome of brick and left it of marble, did the aberrations from consistency in architecture strike Vitruvius,—a Greek, indeed, but who, from the natural influence of the times, seemed to have imbibed many Roman ideas, so as to induce him bitterly to inveigh against them. 'The Greeks,' he says, 'ever mindful not to represent in the copy what could not exist in the original, would, on no account, in the slanting cornices of their pediments, have placed the dentiles under the medallions; since such proceeding would have been in direct opposition to the original principle of the wooden roof: but the Romans never suffered themselves to be shackled by rules of propriety so minute and so strict. They place both dentiles and medallions just as, and wherever, their whim happens to prompt them.'

"Under the reign of Augustus's immediate successor and nephew, Tiberius, architecture was already so degenerate, that the arch, built by that emperor in honour of his uncle, exhibits the most lamentable defect of proportion. Of immense width, in proportion to its height, it is supported by two piers, and flanked by two columns so jejune as to look like a dwarf with long meagre limbs. The pediment, too narrow to rest on the entablature from column to column, seems in danger of slipping down between them. Exactly reversed from this arch, in all its defects, is that of Trajan at Ancona: its gateway offers a height wholly disproportionate to its width; all its parts appear squeezed together from the sides, and elongated in the same proportion from the ground upwards. To prodigiously elevated pedestals underneath, and expletives above, we see added every where a confused reduplication of unmeaning mouldings. Bad taste seems carried to its highest pitch in the Porta

dei Borsari, at Verona, probably built under Alexander Severus. The columns are fluted spirally, and the pediments over the niches are alternately round and triangular. We might, indeed, quote something worse, if the spiral column of Rosso, now in the Colonna palace of Rome, and said to have been found in the ancient temple of Bellona, is really antique in its form as well as its material. Instances of arches springing from column to column, without the intervention of entablatures, are seen in Diocletian's palace at Spalatro.

"Of the original construction, interesting as associated with the origin and national achievements of the Greeks, pleasing to the beholder as accounting for every partial form, making beauty rise directly from utility, and maintain with it an indissoluble connection, not a vestige was left uncorrupted. Architecture, from being, in the time of its purity, like a young virgin, all health, simplicity, and truth, her modest beauties derived from her natural and essential forms, in its degeneracy and corruption was overladen with meretricious ornaments; fulsome from their glare, and oppressive with their weight and encumbrance. The bad taste of Rome became so general as to extend to the very heart of Greece itself; and the same defects are observable in the arch of Titus on the banks of the Tiber, and in the arch of Adrian on the banks of the Ilissus. Yet can it not be denied, that the Roman architecture, in the curves and convexities of the arch, afforded means of adding much of variety and beauty to the straight lines, flat surfaces, and angular terminations, and created a pleasing impression, which its awkward combination of Grecian forms could not destroy, and which it must preserve, whether it shook off or remained trammelled with inconsistent additions.

"Under the influence of Rome, and in the general decline of art, not only the composition, but the execution of architectural ornaments lost all their former excellence. Plain mouldings, no longer contrasted with each other, but tastelessly multiplied, became at once heavy, and yet tame, and without effect; imitative ornaments were ill wrought and confused. While yet edifices so vast and magnificent as that of which we see the remains, under the name of the Temple of Peace, continued to be erected, sculpture had already fallen to so low an ebb, that its gigantic marble brackets, ornamented with victories, offer a workmanship not superior to the worst of Gothic eras; and not much later, under Constantine, its powers seemed so entirely palsied, that, according to some writers, the arch of that emperor could only be decorated by stripping that of Trajan of bas-reliefs, wrought in honour of another emperor, and recording other conquests.

"We have seen that in Greece, from the ignorance of the art of vaulting, even temples were left open to the sky, and scenic exhibitions performed under the broad canopy of heaven, and, consequently, in the daytime.

"At Rome, from the deficiency of glass sufficient for their wants, many chambers, destined for public meeting and private habitation, seem never to have had any other light than that of lamps. In the baths of Titus, the Laocoon was found in a room totally shut out from daylight. In these apartments beauty was sought in a less degree from the chaste effect of relief than from the glitter of costly materials and the gaudiness of vivid and contrasted colours; a taste alike reprobated by Vitruvius and by Pliny, and nevertheless carried to such a pitch, that the richest marbles still had additional spots of different hues, stained or inserted in them, to add to their brilliancy. While apartments of a more magnificent description thus shone with porphyry, and serpentine, and verde, and rosso, and giallo antico, and every species of agate and jasper, of ordinary rooms the walls were painted in encaustic colours, less expensive, but not less vivid; and the fanciful combinations of vegetable and animal life, already exhibited in sculpture, became in painting, from the easier flourishing of the pencil, and the more uncontrolled range it found in the large flat surfaces to cover, still more extravagant. All the decorations of rooms seem, in the later ages of the empire, to have been in that style which the

Italians inappropriately enough called grotesque, from having seen its first specimens in the grottoes or excavations which restored ancient buildings to light, and which has since, with still less propriety, been called Arabesque; since the Arabs, prevented by their religion from representing animated nature, never knew them at all.

"The architecture of the heathen Romans, in its deterioration, followed so regular a course, that that which most immediately preceded the conversion of its rulers to Christianity is also the worst. In the palace of the last emperor who persecuted the Christians, of him who immediately preceded Constantine, their first imperial advocate, of Dioclesian at Spalatro, we not only see some of the columns carrying the arch itself instead of an intervening fragment of entablature, which may, indeed, be deemed an improvement, as discarding a now useless member, but others supported on brackets instead of pedestals, on which more of a similar nature again rest, without any continued line of separation to mark an intervening floor; and entablatures which reach not horizontally from column to column, but with all their various component parts of architecture, frieze, and cornice, circulate round a huge connecting arch." (p. 69—81.)

(*To be continued.*)

ART. II. *A Dictionary of the Architecture and Archæology of the Middle Ages.* By JOHN BRITTON, F. R. S., Honorary Member of the Institute of British Architects, and of other Societies Foreign and English. Royal 8vo. Part III. containing two sheets, and thirteen engravings. London, 1835. Price 12*s*.

PARTS I. and II. of this publication appeared upwards of two years ago, and we began to despair of seeing the remainder of the work, which we consider one of first-rate excellence. It will contain the essence of the whole of Mr. Britton's architectural and archæological knowledge; in short, it will comprise the most valuable part of all his other productions, and will therefore be as essential to every architect as an English dictionary is to every Englishman. All the fears we have ever had respecting this work were comprised in that of the author never being able to bring it to a conclusion. We were, therefore, much gratified with the information conveyed in the address which accompanies this third part, that the author "feels assured that he will be enabled to complete the whole in the course of the ensuing winter." We sincerely hope that he will meet with such a sale of this part as will encourage him to proceed; when the work is finished, there can be no doubt that the sale will be most extensive.

The letterpress of the present part concludes the article castle, and contains catacomb, cathedral, ceiling, cell, cellar, cemetery, chair, chamber, chancel, chantry, chapel, chapterhouse, and a great number of minor articles.

ART. III. *A Historical Sketch of the Art of Sculpture in Wood, from the earliest Period to the present Time; with Notices of the most remarkable sculptural Works in the same Material now remaining in Europe, and some account of the Designers.* By Robert Folkestone Williams, Author of "Rhymes and Rhapsodies," &c. Small 8vo, pp. 109. London, 1835.

THIS is a very interesting book: the author has brought to bear upon his subject an extensive acquaintance with the arts and the literature, not only of England, but of France, Germany, and Italy; and, by giving the history of eminent sculptural productions of different ages, and of different parts of the Continent, he contrives to interest not only the reader's taste for art, but his feelings for suffering, humanity. One would not, on looking at the title of such a work, expect to find in it that the Inquisition was one of the causes of the improvement of sculpture; or, that some of the finest works of this form of art should be the pictures of heretics who were burned.

"The church of the Dominican Friars, at Venice, dedicated to St. John and St. Paul, was enriched with a multitude of works of art, of every description; and possessed a library, which, in its original state, might have been considered one of the most extraordinary apartments in the world. By a reference to a curious series of engravings in the possession of Mr. W. H. Brooke, the talented artist, illustrating all that was most remarkable in the city of Venice (an ancient and singular work), I have been enabled to ascertain the position of the statues, and the object of the parties who caused them there to be placed. The grand design of the artist in the erection of that chamber, and in the application of its ornaments, was to show the triumph of the Roman Catholic religion over all its opponents. With this object in view, statues, rather larger than life, exhibiting the persons of the most noted "heretics," as they were called, in different positions, wearing chains, signifying their complete subjection, and clothed in loose drapery or in ragged vestments, to denote their disreputable condition, were ranged round the room, each supporting a sort of heavy buttress, projecting above their heads from the wall. These figures were placed at regular distances from each other, and each pedestal on which the single statue is standing contains a representation of the face and body of that individual, writhing in the agonies of a state of eternal suffering. Upon the breasts of these devoted victims inscriptions have been carved in Latin, copies of which will be found in the Appendix, stating their names, their countries, their offences against the church, the years signalised by their heresies, and the names of those orthodox advocates, who, in the opinion of the Catholics, proved the falsehood, and defeated the arguments of the schismatics. Beneath each pedestal appear the writings of the heretics, burning in continual flame — above the head of the statue is seen the figure of a child, or angel, apparently much gratified with the torments inflicted on the Protestants; and above each angel is a portrait, possibly of the good Catholic whose arguments, it has been stated, confounded the heretic. The statues, with their pedestals, were carved out of solid masses of the wood of the chestnut tree.

"Judging of these figures by a comparison with the sculptural works in the same material produced since the commencement of the Christian era, they are unparalleled. It cannot be denied that they show the hand of a great master. Every judicious critic must allow that Brustolini's statues are the result of a perfect knowledge of the resources of art, made subservient to as intimate a familiarity with the resources of nature. In design and execution

they approach nearer in spirit to the antique than any production of a more recent age with which I am acquainted; indeed, taken as a connected whole, I think they will not be found much inferior to the grandest conceptions of the Greeks. The Greek sculptors possessed numberless advantages not allowed to the Italian artist. The subjects chosen by the former were generally clothed with a heroic or political interest. They represented warriors with the attributes of gods, and deities evincing all the perfection of humanity. Their female figures are the most faithful representatives of the most perfect state of feminine loveliness. Take their best school of art, and there will be found in its examples a union of ideal and natural beauty (the result of a lofty imagination governed by mature judgment), which presents to the eye a combination of shapes, a series of scenes and a multitude of characters, as noble, as true, and as various, as nature in her sublimest efforts can produce, or man in his most intellectual mood conceive. While they demand the admiration of the mind, they win the adoration of the heart. A man cannot gain a more satisfactory conception of the nobility of his species, than is to be acquired by viewing these glorious manifestations of its intelligence.

"Brustolini had no ideal beauty to delineate. His subjects had no political interest to recommend them: they were chiefly men advanced in life; and the design was not to waken for them sympathy, or create admiration, but to show them in the most humiliating light to the spectator, and impress on him a conviction of their wretchedness and worthlessness, their forfeiture of heavenly notice, and their unworthiness of human commiseration. It is true that the Protestants are represented in a state of torment; but their sufferings were not intended to extort pity for the victim; they were designed to threaten the same punishment to the heretic. The orthodox were to see in these statues the glory of 'the true church,' while the schismatic might behold and tremble 'for the wrath to come.' Yet, from beneath the ignoble trammels which bigotry has sought to enslave the natural philanthropy of art, genius is seen to emancipate itself; and, in characters of grandeur that cannot be misinterpreted, declares its universal charity and perfect freedom. If ever the sublime was approached, it is seen in these sculptures. When we bring into consideration the wonderful variety of expression in the countenances; the surprising boldness and beauty in the arrangement of the drapery, equally varied; the extraordinary life-like energy and majesty visible in the position of the limbs, in no two instances placed in the same posture; the vastness of the sculptor's design, his fidelity to nature in all its details; the material upon which he worked, and the difficulties he must have had to surmount before he completed his conception; it is impossible to avoid bestowing a prodigal share of praise on the genius of Brustolini, while a disposition is felt to regard his productions as perfect miracles of art. The pedestals divide admiration with the statues; for the distortion of the features, under the action of the most intense suffering; the scorched appearance of the flesh, enduring the burning heat of the damned; the flames and snakes, that occupy on the head the place of the hair; and the shrivelled arms and hands, that hang helplessly on each side, are executed with a semblance of reality quite startling.

"It is not improbable that the superiors of the Church of Rome afforded the artist every facility towards successfully completing his design. It was to show the supremacy of their religion that he worked; and with such an object in view, it is easy to imagine that they assisted heart and hand in the labour. A great proportion of the reformers of the Roman Catholic doctrine had originally been its professors, living on intimate terms with its most influential prelates, and possessing their unlimited confidence. Their persons were known, their habits notorious. This general knowledge of these men must have much assisted the artist. When he could not get to see the originals, it is likely that portraits were obtained for him; and by comparing Brustolini's statues of Erasmus, Luther, Melancthon, and others, with the authentic portraits of these distinguished Protestants, a considerable resemblance will be observed; although one certainly not favourable to the reformers. In this

comparison, the fact must be borne in mind, that the design was to flatter the Church of Rome at the expense of the Protestants; 'the heretics,' therefore, are made to appear as unprepossessing as possible.

"While attempting to account for the various pictures of agony delineated on the different pedestals (rivalling in intensity the feeling of horror seen in the Laocoon, and that of suffering in the Dying Gladiator), where features are distorted without extravagance, and the expression painful without being offensive, I think it is not preposterous to imagine that, in those times of unrelenting persecution by the Catholic prelates, of those who dissented from them in opinion, to the sculptor every *Auto da Fé* became a study, and each scene of torture in the Inquisition, a lesson. It is a most uncharitable supposition, I acknowledge; and I regret to add, that too much evidence of it exists, to render it improbable."

These statues are now in London. They were first in the possession of Mr. Ellis, John Street, Oxford Street, but have been for some months open to the public in Bond Street, where we believe they are still exhibiting.

In the preface the author informs us that this work is intended as a popular compendium, of a more elaborate work which the author has in preparation "for those who are desirous of a complete book of reference, in which every thing relating to timber architecture and sculpture in wood will be lucidly arranged and philosophically treated." We should be wanting in our duty to the public, if we did not most strongly recommend this popular compendium, and for ourselves we shall most anxiously expect the promised complete book of reference on every thing relating to timber architecture.

ART. IV. *A Historical and Descriptive Account of All Saints' Church, in Newcastle upon Tyne, illustrated with Plans, Views, and Architectural Details.* By T. SOPWITH. 8vo, pp. 131; several plates and woodcuts. Newcastle, 1826.

THOUGH this may be considered a local work, yet it goes so much into detail, and gives such accurate plans, sections, views, estimates, &c., of the church, that it is calculated to be of considerable use to the young architect. After describing the old church, which occupies the first 45 pages of the work, the subject of the new church is entered on. From a number of competition plans, given in in 1786, that of Mr. D. Stephenson was adopted, and the work was commenced soon afterwards, and finished in 1796. The plan of the church may be described as a circle, slightly flattened, with a recess on one side for the pulpit, and another exactly opposite for a staircase. The following interesting matter occurs respecting the pulpit: — "From the extreme height and capacity of the building, there at first appeared a considerable difficulty in placing the pulpit; as, in many situations, the voice of the preacher was nearly inaudible.

To remedy this defect, a concave sounding-board was tried, but without producing the desired effect. In March, 1790, the pulpit and reading-desk were removed, and a temporary reading-desk placed in front of the communion rails. In the month of September following, the pulpit was removed from the east wall to the front of the pews in the area, in which situation it remained until the year 1812, when it was resolved to close the middle window of the chancel, and place the pulpit immediately against it: in this situation it yet remains; and, owing to the concave arch of the recess, together with a large sounding-board, the sound is greatly prevented from being dispersed in the vacuity above the gallery and centre of the church. The taste and elegance displayed in the alteration, which was done under the direction of Mr. Stokoe, leave no doubt of this being, not only the most useful, but the most appropriate and handsome situation that could have been selected; but, though in many respects a valuable improvement, it has by no means so completely effected the proposed object, as to lay aside speculation on further amendment. The very peculiar construction of the building, and the present imperfect knowledge of the practical application of the science of acoustics to the regulation of sound, seem powerful obstacles to any projection founded on scientific principles; while the expense and uncertainty of actual experiment appear equally formidable. It has been proposed to amend the defect, by placing a flat ceiling under the present concave one. Not to mention, however, the sacrifice of so beautiful an ornament as the present ceiling, it appears at least doubtful whether the reflection of sound from a flat surface would be much superior to that from the present concavity, the tendency of which to concentrate sound seems more than to counterbalance the inconvenience of its additional space; which, owing to the windows and cornice, could not be avoided to a greater extent than the height of the segment which it forms. By the addition of transparent paintings on the inner side of the windows at each side of the pulpit, a uniform reflecting surface would be formed, which could not fail to produce a desirable effect, by preventing that dispersion and weakening of the sound, which must naturally be caused by such recesses in their present open state. The application of large brackets, in the manner of inverted buttresses of ornamental open woodwork, at the upper part of the walls, seems calculated to be serviceable in all large buildings, where a considerable extent of plain wall occurs without any projection. When this is the case, the sound, instead of being forcibly projected to the auditory in the body of the church, is diverted and weakened, by its tendency to follow the uninterrupted course of the wall; and thus, in All Saints', and other buildings of a similar form, a kind of whispering gallery is

formed, for want of projecting obstacles to divert the current of sound, and that which is inaudible in the centre, is perfectly distinct at the opposite side." (p. 70—72.)

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

RECENT Improvements in the Carpet Manufacture.—There is a most interesting and philosophical paper on this subject in Professor Jameson's *Journal* for October, 1835, which we would recommend every young architect to read. The article is by Mr. Edward Sang, teacher of mathematics and lecturer on natural philosophy, Edinburgh; and it forms one of a series of reports regarding new inventions and improvements in the useful arts throughout Europe, which have been ordered by the Society of Arts for Scotland; one of the most useful and best conducted societies that that or any country can boast of. Mr. Sang's paper shows how much mind, and how much of philanthropic feeling, can be thrown into any subject, when these qualities belong to the head and heart of the writer. A few generations back, Mr. Sang observes, were content with covering their floors with what we now confine to our stables; and lands were granted for the purpose of providing clean straw for the royal chambers. Now Kidderminster carpets and well-scoured boards have displaced that vehicle of infection, even in the dwellings of the laborious artisan. "To some," says Mr. Sang, "the introduction of such luxuries may appear to savour of effeminacy: those who admire nations only when formidable in war, who glory in bloodshed and devastation, may fear that when each peasant treads upon a well-made carpet, when the cot boasts of luxuries unknown two centuries ago even in the palace, nations will lift but feeble hands in encroachments upon each other. But he is much mistaken who regards such comforts as marks of effeminacy. Were they the results of Roman spoliation; were our furniture, our china, and our carpets, torn from the industrious of conquered provinces; had we our silks for tribute, and our cottons for booty; then, indeed, should we be effeminate and vicious. But those comforts which we so richly enjoy are the results of industrious and upright toil. Every luxury that surrounds us is the fruit of skilled energy: the procuring of it has exercised our patience, and improved our strength; while the enjoyment of it restrains us from wanton aggressions on our neighbours, and nerves in our own defence. The spread of comforts among every rank guards us against tumult on the one hand, and oppression on the other; and every improvement on our manufactures, every cheapening of our commodities, is a step forward in the path to happiness."

After speaking of the elegance of the process of the carpet manufacture, and the beauty of its products, Mr. Sang describes the triple carpet, the invention of Mr. Morton of Kilmarnock. "The inventor of this texture," he says, "has conferred on us a very great benefit: he has furnished us with a lighter embellishment for the interior of our dwellings, and presented to us another evidence of the active benevolence and social disposition of man. And it is agreeable to reflect that, in the nursing of the idea, and the carrying of it into effect, he must have felt a pleasure much more intense than is likely to be experienced by any of the multitudes who will enjoy the fruits of his abilities.

"A desire for something in the interior of a dwelling, analogous to the soft clothing of the external world, seems to be generally felt; for, in all states of society, attempts are made to remove the hardness and unseemliness of the floor. Among the poorer nations these attempts are confined to the mere dormitories; but, as advances are made in wealth, the mat and the carpet begin to appear. The softness of the turf, and more than its smoothness, having been attained, it was natural to imitate also its embellishments: for this purpose

several distinct kinds of carpet texture have been contrived. On one of these I have already reported an immense improvement, and proceed to describe a no less striking improvement in another."

The carpet alluded to is the Brussels carpet, distinguished from the common one by having a raised pile, and by having the figures and colours entirely produced by the warp. An improvement on this and other carpets, by Mr. Whytock, is next described, and appears to be the last great improvement made in the carpet manufacture. "Greatly admired patterns have already been produced by this method; and the manufacture meets with great and deserved encouragement." (p. 260.) We shall quote Mr. Sang's very interesting conclusion: —

"A strong prejudice, sanctioned by an old proverb, exists against those who turn their attention to several branches of the arts; yet it is a fact, that almost every improver has been Jack of a good many trades; nay, an acquaintance with a variety of operations is essential to the invention of new ones; and very often prodigious improvements are effected by the simple transference of a process from one art to another. May I be allowed to hint that the triple carpet is one of those generalisations so often found in scientific researches, and that its inventor appears to have extended his studies far beyond the subject of carpet-weaving. The patent carpet, again, bears on the face of it the necessity for a knowledge of the arts both of dying and of weaving; for no one not intimately versed in both arts could have conceived, or, having conceived, could have carried the idea into effect. The difficulties to be encountered were by no means few, and the overcoming of each was itself an invention. Another idea exists, that the happening to hit upon new discoveries is a matter of chance; and some appear (I judge from their conduct) to imagine that the less they know of a subject, the more likely they are to alight on something new, as a bad swordsman trusts to that very circumstance for outwitting his antagonist. Once in a century, indeed, one man, among ten millions, may find, by chance, some valuable process; but the great mass of our current inventions are the fruits of assiduous and well-directed exertion; and the mind, even more truly than the body, must earn its food by the sweat of its brow."

Art. II. *Domestic Notices.*

ENGLAND.

"*As a Means for teaching the Public some Lessons in Architecture,*" I beg leave to suggest the exhibition of the various designs that may be given in for the Houses of Parliament, with a printed catalogue of the whole; containing the detailed description of each design, by its author, with the reasons for, and against, each design, either by the committee, or by those who prepare the catalogue. I would farther propose, that there should be a public lecture on the different designs, by a professor; who should go round the room from one picture to another; and that this lecture should be delivered once every forenoon, for a week or two, for the benefit of persons of leisure; and once every evening, between eight and nine o'clock, for the benefit of mechanics and other persons engaged all day in business. — *Heder. London, Oct.* 13. 1835.

Heating by Gas. — The application of heating by the flame of burning gas is coming very extensively into use. The plan has recently been introduced at Islington Church, and St. Michael's Church, Strand; the vestry-room at St. Sepulchre's, His Majesty's Royal Mint, Westminster Hospital, and several banking-houses and other public buildings. (*Morn. Chron.*, Oct. 9.)

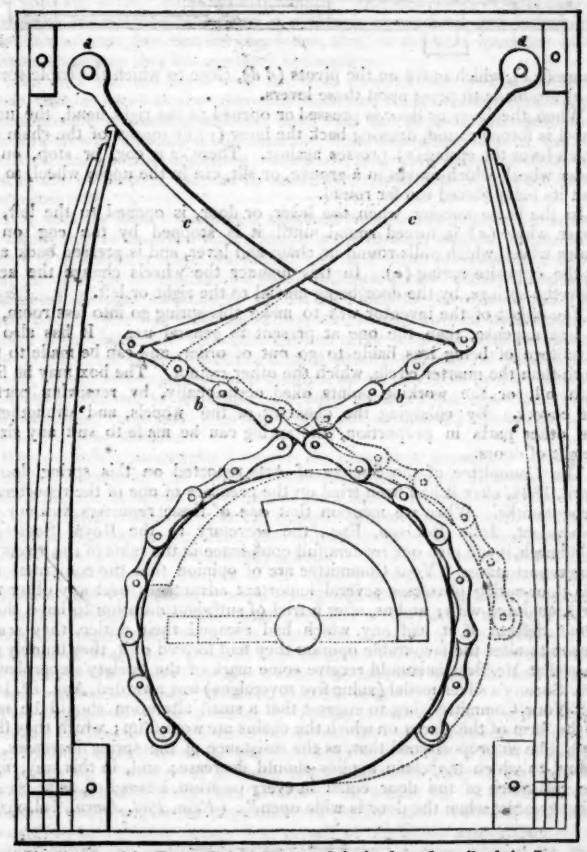
We have recommended this mode of heating, in several cases, for town green-houses and conservatories; and, as soon as gas becomes a little cheaper, we are persuaded it will become general for this and other purposes. The

great difficulty at present is to get an apparatus which, while it communicates all, or the greater part of, the heat generated to the apartment or space to be heated, does not admit of the escape of gas into it. — *Cond.*

SCOTLAND.

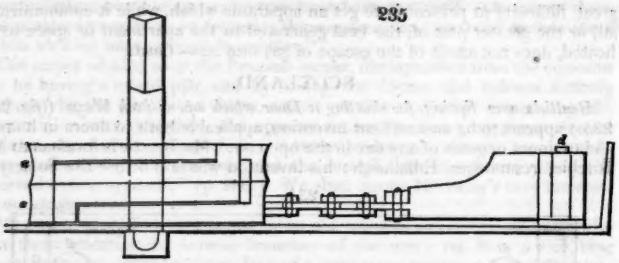
Beattie's new Spring for shutting a Door which opens both Ways (*fig.* 234, 235.) appears to be an excellent invention, applicable both to doors in houses, and to doors or gates of any size in the open air. Mr. Beattie is foreman to Mr. Ritchie, ironmonger, Edinburgh: his invention was laid before the Society of

234



Arts for Scotland in December, 1833, and it is thus described in Jameson's *Journal* for October, 1835:—"The spring is contained in an iron box, 11 in. by 7 in., and 1½ in. deep, and consists of two horizontal wheels, marked on the section *a a* (*fig.* 235.), lying close above, and parallel to, one another, moving on the same axis with the door, to which the chains (*b b*) are attached, and moves with the wheels; the other ends of these chains are fixed to the

235



levers (*e e*), which move on the pivots (*d d*), close to which the triple springs (*e e*) are made to press upon these levers.

When the lever or door is pressed or opened to the right hand, the under wheel is forced round, drawing back the lever (*c*) by means of the chain (*b*), which lever the spring (*e*) presses against. There is a cog, or stop, on the under wheel, which moves in a groove, or slit, cut in the upper wheel, to prevent its being forced too far round.

In the same manner, when the lever, or door, is opened to the left, the upper wheel (*a*) is forced round, until it is stopped by the cog on the under wheel, which pulls round its chain and lever, and is pressed back again by the opposite spring (*e*). In this manner the wheels change the action upon the springs, by the door being moved to the right or left.

The object of the inventor was to make this spring go into less room, and at less expense, than the one at present in general use. It has also the advantage of being less liable to go out of order, and can be made to turn more than the quarter circle, which the other cannot. The box may be filled with oil, or the working points oiled occasionally, by removing part of the covers. By enlarging the diameter of the wheels, and strengthening the other parts in proportion, the spring can be made to suit any size or weight of doors.

The Committee of the Society of Arts reported on this spring door in April, 1834, after it had been tried on the premises of one of the reporters for three months. When we mention that one of these reporters was our correspondent, John Robison, Esq., the secretary to the Royal Society of Edinburgh, it will give our readers full confidence in the value of the invention. The report states, "Your Committee are of opinion that the construction of this door-spring possesses several important advantages over any other they are acquainted with; and as, after a trial of sufficient duration to have shown latent defects, if it had any, which had escaped their notice, they see no reason to alter the favourable opinion they had formed of it, they humbly propose that Mr. Beattie should receive some mark of the Society's approbation. The Society's silver medal (value five sovereigns) was awarded, Aug. 12. 1835.

"Your Committee beg to suggest that a small alteration should be made in the form of the pieces on which the chains are wound up; which they think should be so proportioned that, as the resistance of the spring increases, the radius, to which the chain applies should decrease; and, in this way, make the resistance of the door equal in every position, instead of, as at present, being greatest when the door is wide open." (*Edin. Phil. Journ.*, vol. xix.)

Art. III. *Retrospective Criticism.*

Erratum. — In p. 58., for "ring-posts," read "king-posts."

Literary Composition of Architects and Surveyors. (p. 470.) — In looking over the Retrospective Criticism of this month's *Architectural Magazine*, I was

astonished to find there one of those productions of presuming ignorance, or wilful malice, that too often creep into the public prints; but which, fortunately, create no other feelings but those of contempt for their authors. Astonished I was; not, indeed, that a man of the stamp that this solicitor proves himself should have written such an effusion; but that you, Sir, to whom the architectural world is already much indebted, and from whom they still expect much, should have admitted such an article into your Magazine. It would be useless, indeed, to call upon you to contradict the false statement that appears therein; the numerous articles published in your work so flatly contradict it, and if this Solicitor will but take the trouble to look into any of the former Numbers of this Magazine only, he will find that architects are not only as capable of writing in as correct a style as any other professional men, but that his own letter, alas! is the first specimen of low-minded arrogance that has appeared in its pages.

I am sure you will agree with me, from remarks that you have formerly made, that, as much as any other profession, the study of architecture requires a superior and classical education; now, from the expense attendant on the pursuit, all who embrace it will naturally, from their circumstances, have previously received that education; every one may then fairly conclude what description of persons, that he by courtesy styles architects, this Solicitor is connected with.

Is it with the idea of crushing a supposed rival, and to expose the audacity of attempting to interfere with a lawyer's prerogative, that he speaks of the *jargon* of specifications and estimates? Or is it from self-interested motives that he calls for an explanation to all technical terms? thereby creating an additional demand for copying clerks, by which he may obtain some little employment. He very modestly allows, with respect to their disinclination to reform themselves, that architects do not differ from the other professions: how noble, then! how disinterested and utterly forgetful of self, it might appear, in one whose profession is granted, on all hands, to be so completely made up of abuses, to set about reforming another; but, alas! La Bruyère truly observes, "*Tel parle d'un autre, et en fait un portrait affreux, qui ne voit pas qu'il se peint lui-même.*"

His concluding paragraphs, however, are excessively amusing:—"I would strongly recommend," he solemnly observes, "all young men studying the profession, not to spend the whole of their leisure time in copying drawings, but to devote a portion of it to the study of grammar and syntax. If they do not, when they get into practice they will be laughed at by their workmen; who are now, perhaps, at the infant school." Thus it is seen, that architects, poor ignorant beings! crawl out of the nursery into their profession; while it is allowed only to bricklayers and short-sighted solicitors to study grammar at the infant school! For the future, let this accomplished man add to his experience (and profit by it if he can) the opinion of the readers of the *Architectural Magazine;* who will have formed a pretty correct estimate of his ability, and of the class of society in which he moves, "from the sort of letter he has written."—*Alpha. London, Oct.* 25. 1835.

The Regulations of the Institute of British Architects. (p. 470.)—Having taken up my pen to refute a senseless attack, that, had it appeared any where else, I should have deemed far too contemptible to notice, allow me to add a few words on a subject of a much more important nature; and one that requires a much abler critic than myself to do justice to. I allude to some remarks of your own, on the Regulations of the Institute of British Architects. No one can be a greater enemy than myself to exclusive associations of any kind, when the non-admitted have an equal claim, in every respect, to those who enjoy their privileges; but I think it also greatly incumbent on societies, at all times, to keep in view the main object of their union. That of the Society in question, I think I may safely affirm, is a contemplated advantage to both the public and themselves: as to the best mode of attaining this end, is the point on which we widely differ. I cannot imagine any very advan-

tageous results, either from the erection of a splendid museum, or from the rearing of a whole host of architectural amateurs; while, on the other hand, I conceive the admission into an organised Society of Architects of the trades connected with that profession to be fraught with the most pernicious consequences. Permit me only to ask you, Sir, what would be the probable result, if men were allowed to practise as surgeons without having passed their examination at the College? Why, simply this; that the profession would be overrun by hundreds of the mere dabblers in drugs, from the pill-making quack to the chemist's shopman; who, alike ignorant of medicine and every thing else, would have thereby a sort of license to kill. What would be the result, too, if men were allowed to plead at the bar, without having been called there by those competent to judge of their abilities for so doing? Why, that that profession would be also overrun by a class of men of a still more doubtful cast; pettifogging lawyers, copying clerks, and *soi-disant solicitors*. And what *are*, at the present moment, the consequences of there being no restriction of this nature in the practice of architecture? Alas! those only of the most injurious kind. From the great ignorance of its principles that generally prevails, and from a vague notion that exists of the enormous expense of employing an established architect, the public are too often imposed upon by the mere pretenders in art; who, although equally ignorant of its principles, nevertheless, from being in some sort allied to the profession, consider themselves entitled to practise in it. Thus it is, that carpenters, cabinetmakers, ironmongers, upholsterers, painters, and undertakers, in short all trades directly or indirectly connected with building, usurp the privileges, without having studied even its elements: and are the public gainers by this? I recall to mind, at this moment, one case, of many, that will fairly answer this question. A gentleman, some months since, wished to build himself a Gothic villa; but, his mind being disturbed with the charges and commissions of architects, he was unwilling to employ one. In this dilemma, a house-painter, who was at work for him, generously offered to make a design: he did so, and undertook the building too; and what was the result? The *Gothic* villa cost nearly double what was intended; and there it now stands, a model of unstudied elegance, looking like an overgrown specimen of a Tunbridge Wells work-box. Should these men be admitted to the Institute, where would this evil have its bounds? Would it not be sanctioning those very impositions, which are now causing such lasting injuries to the profession, and the world at large, "elevating men in public opinion, otherwise than by their own individual merits," and placing on an equality the totally ignorant with those who had made architecture the study of their lives? The exclusive measures, of which you complain, unfortunately cannot put a stop to this growing evil; but, at the least, they will not have the effect of countenancing it. In my opinion, the most satisfactory consequences could only arise from the *severest* scrutiny being made in electing members for a Society of Architects: and I hope to see the day when the present Institute shall have been reorganised; the heads of the profession appointed its judges; and an act obtained, allowing no persons to be enrolled on its lists, or to practise as architects, until they have passed the *strictest* examinations before them. I could dilate at considerable length on the various means that the Institute would possess of disseminating architectural knowledge among all classes of society, without uniting them to their body, which would be equally efficacious in creating a more refined taste, and a consequent demand for works of a superior kind [we shall be glad if our correspondent will do so], were I not aware that I have already trespassed too much on your valuable time. England has daily cause to regret the execrable taste displayed in some of her public buildings; and I firmly believe the want of a restrictive power in the practice of architecture to be the very head and front of this offending.—*Alpha. London, Oct.* 25. 1835.

Surgeons' College. (p. 190.)—Some time ago I made some comments on the new front of the Surgeons' College, Lincoln's Inn Fields, not altogether favourable to it; but, if I then felt rather disappointed, I am now no less, yet

far more agreeably so, on perceiving that it contradicts the opinion I had then formed of it: in fact, I was by far too premature in my judgment, and in very grave error, when I fancied that I then sufficiently understood the architect's intentions, although I, at the same time, betrayed that I did not, by admitting my ignorance as to whether he intended to crown the portico by a pediment, which was, by the by, such an awkward blunder, that I deserved to be quizzed for it, and must presume that my insignificance proved my shield. Pediment there is, I find, none; yet, notwithstanding, I still retain my notion as to the propriety of there being a pediment above a portico, I willingly admit that exceptions are occasionally allowable, and the front of Surgeon's College is a striking case in point. Here it certainly would have been no improvement to have added one, inasmuch as it would have quite dispelled the effect now arising from the continued upper range of windows. The truth is, I ought to have waited; for I little imagined that the architect intended to finish the whole as he has done, crowning the edifice by a superior entablature, to which that of the colonnade becomes subordinate in importance; and a façade of unusually commanding character is thus formed. This entablature, which has a dentiled cornice, enriched with lions' heads, and an inscription cut upon the frieze, combines the entire front into one mass, so that the building now looks quite the reverse of what I feared it would. The entablature is carried round the ends as far as the chimneys; which latter are by no means the least pleasing features in the design, being rendered particularly ornamental, and contributing in no small degree to the architectural expression of the *ensemble*, and to variety of outline. Owing to the greater width now given to the front, the portico does not appear altogether so large as it formerly did; but this I consider rather an advantage than the contrary, unless it were the entire height of the main structure. That and the building now harmonise with each other; whereas, before they formed a most monstrous combination, and one so disagreeable, that it was impossible even to look at the colonnade itself with any satisfaction. A view of the old front, with what renders it a still greater curiosity, the sun shining full upon it from the north-east, at a time of the day when well-dressed people are walking about, will be found in Jones's *Metropolitan Improvements;* and a more barbarous piece of architecture than it was can hardly be pointed out. The editor of that work justly condemns the building; but is too prodigal of his commendation on the portico, which then exhibited very little of Ionic character or beauty. Even taken by itself, it looked cold, bald, and unfinished; whereas, without losing any of its simplicity, or, I might say, while manifesting that quality more decidedly, it is now suitably finished up, the columns fluted, and the mouldings of the entablature carved. Frigid nakedness in architecture is not simplicity; for simplicity must be accompanied by other desirable qualities to give it value. Yet Mr. Elmes was pleased to say of this portico, in its original state, that we had nothing that surpassed it "for chaste simplicity and harmony of proportion." Where, then, was the yet unrivalled Ionic portico of St. Pancras' church, where simplicity, dignity, and grace are mingled together? The portico of the London University was then in existence, and, I believe, also that of Carlton House; the former of which *is* not, and the latter *was* not, deficient, either in simplicity or harmony of proportion. But I am running astray, and, therefore, had better break off, which I do, with my apologies to Mr. Barry for my hasty and unjust remarks on a former occasion, and my congratulations to the College of Surgeons on their possessing a building so infinitely superior to the sulky-looking one of the Physicians, in Pall-Mall East.— *Zero. London, Oct.*, 1835.

The Perspective Delineator. (p. 459.)—Unless this instrument is calculated to effect a material saving of time in making perspective drawings, I must confess I do not see the particular value of it; because the operation, as far as I can comprehend it from the description, appears to me quite as tiresome, if not more so, than the usual process; and, as to there being no occasion for vanishing points, they may be dispensed with whenever they fall at an incon-

venient distance, without the aid of that, or any other instrument, by an equally simple and expeditious method? Unfortunately, however, your correspondent, Mr. Richardson, has not stated how far the delineator is serviceable in abridging the draftsman's operations.

If, on the other hand, the chief recommendation of the instrument is, that it enables those who "have no idea of drawing perspective" to work mechanically, and to make a perspective representation of any object, without knowing more than the management of the instrument, I, for one, should be so far from terming it a beneficial invention, that I should call it directly the reverse; and little better than one for preventing persons from making themselves acquainted with the principles and practice of perspective. For a draftsman to be ignorant of perspective, in which adequate proficiency may be attained in a short time by any person of ordinary application, is almost unpardonable; as unpardonable as for a writer to be ignorant of grammar. And, granting that the *delineator*, if it really deserves the character given to it, may be exceedingly useful as a mechanical aid in drawing, the same as rulers and compasses, it must be a wretched substitute for a knowledge of the principles of perspective. Once thoroughly acquainted with those principles, and n the habit of applying them, an artist acquires a promptitude, together with a correctness, both of eye and hand, which enables him to draw objects with accuracy, and observe the relative proportions and the situations of their parts, without making a strict perspective delineation, which may not always be necessary; whereas, a person who trusts entirely to an instrument will not be able to proceed a step without it, and will be obliged to make use of it continually for every part of his drawing, and be pretty much in the situation of a schoolboy, who is obliged to keep perpetually referring to his dictionary and grammar. Consequently, whatever time or trouble it may save at first, it is likely, in the end, to occasion a serious expense of both. Besides this, the delineator appears to be very limited in its application, inasmuch as it is fitted only for putting a geometrical design into perspective, and is of no assistance, therefore, in taking views: so, at least, I understand it; for I presume that the point p (see fig. 208. p. 460.), of which q is the perspective situation in the drawing, is taken from, or occurs in, a geometrical representation of the object previously drawn. If not, how do we arrive at this preparatory step in the process, or first obtain the points that are to be transferred perspectively to the drawing? Can they, too, be taken at once from any separate point or drawing of any elevation, or must the geometrical figure be made upon the top of the drawing itself? Or, must not the scale of the perspective drawing depend entirely upon that of the elevation, unless the latter be redrawn according to the scale required? So very much depends upon these circumstances, that, until they are known, it is hardly possible to judge of the real serviceableness of such an instrument. Without exactly making us acquainted with the whole mode of operation, Mr. Richardson might surely have informed us what the delineator really can effect, and what it cannot. I must confess I am rather sceptical as to the real utility of such inventions, having heard of so many for the same purpose, none of which have ever come into general use. Well do I remember seeing one which was to enable persons, utterly ignorant of even drawing, to draw objects in perspective: it was certainly very ingenious, and had but one fault, that of being of not the slightest practical service. — *Scepticus. London, Oct.* 2. 1835.

Ventilation. (p. 460.) — Verus retires from the field; Mr. Britton draws in his horns, and shrinks back into his shell, like a snail; no other champion of Sir J. Soane's bookcases shows himself; and whether Scrutator, or W. H. B., intend to take notice of me, I do not at present know: what, then, is to be done? Nothing occurs to me, but to ask whether your Magazine intends to make us all nervous, by conjuring up images of some hitherto unsuspected, yet, it appears, most formidable, perils, which beset us all. If medical, or, as a certain learned person would say, *medicinal*, writers are correct in their theories, nearly all other people are guilty of singular impertinence; namely,

that of living under circumstances in which, according to these theories, they ought to be defunct, or in a fair way of speedily becoming so; seeing that they pay no attention to precepts, which, we are told, are essentially necessary to keep them alive, but which, for more than nine tenths of mankind, are, unfortunately, utterly impracticable. Having survived, and partly forgotten, these dangers, we might hope to enjoy some peace of mind; but now comes the *Architectural Magazine*, scaring us nearly out of our wits on the subject of ventilation; and pointing out the dangers that beset us both by our firesides, and in our chambers, till we feel most wretchedly, and uselessly, uncomfortable, from this new, and, to most persons, irremediable, source of disquiet. At one time it is hinted that windows reaching down to the floor are likely to be prejudicial to the eyes; and now we are again assured that, unless they are carried up quite to the cornice, the room cannot be properly ventilated. Currents of air are allowed to be injurious to the frame; and, when we have taken every precaution to prevent draughts, and render doors and windows air-tight, we find that we are no better, perhaps even worse, off than before. This is really a most deplorable situation; perplexing to the last degree. Deep cornices, entablatures, and coved ceilings, are all bad; deep and richly fringed window draperies are pernicious; and, I presume, bed curtains must be voted not at all better, or, rather, decidedly more noxious still; because, if closed, they must tend to produce so corrupt an atmosphere, that it is wonderful each sleep is not our last.

Let a bed-chamber be ever so well ventilated, what can it avail, if we sleep in an atmosphere closely confined, and pent up by curtains, which limit us to a very few cubic feet of air? It certainly appears to me, that this is by far a more serious, and at the same time more remediable, evil, than any faults in the construction of the room. I must confess, too, that I do not perceive any great mischief in the tops of the windows, in the chamber you allude to, being only ten feet from the floor, although the room itself is twenty feet high; because, granting that one half of the atmosphere is thus rendered useless, is not the other half amply sufficient? Especially when it is considered that its cubic contents must be about two or three times more than those of what are considered very good-sized bed-rooms, supposing the latter to have the advantage of 10 ft. in height of ventilated atmosphere, and the difference to be occasioned only by the greater area of the apartment; for it is to be presumed that, if the room be 20 ft. high, it is at least equal to 25 ft. square. Admitting such a bulk of atmosphere to be sufficient, the unavailable excess can be no disadvantage, while all the additional and "useless" height must, undoubtedly, be favourable to appearance, and, therefore, not utterly valueless. Thus much must, I think, be granted, or else your doctrine proves a great deal too much; tending to the alarming conclusion, that nearly every bed-chamber in the kingdom is unhealthy.

While I admit the propriety, or, if you will, the urgency, of paying more regard to ventilation, and other matters that have hitherto been not so well attended to as they ought to be, I do not see that we have much to complain of at present, or that there is room, or occasion, for any material improvement, in that respect, in the generality of our best modern-built houses. Although it may be desirable, it is not imperatively necessary, for the enjoyment of health; else, how do persons contrive, during a voyage to India, to sleep in ships' cabins? According to theory, they ought to be half dead before they are half-seas-over; and the same theory would have smothered George IV. in the private apartments of Carlton House; and would, if acted upon, prevent any man, in his senses, from sitting five hours together in a theatre, breathing an atmosphere impregnated with the grossest impurities, a "conglomerated amalgamation," a, Mrs. Butler would say, of malaria and pestilence. We must either give up your doctrine, or give up our cottage residences, with their low-ceilinged rooms. Let us henceforth have done with "love in a cottage" for ever: the very idea of it is suffocation. After all, you may be right; only do

not say that I am wrong in writing this, and endeavouring, if possible, to extort a smile from your absolutely horrified readers. — *Candidus. London, Oct. 6. 1835.*

Art. IV. *Queries and Answers.*

The Superficies that a warm-air Flue will heat, the dimensions being 12 in. by 12 in. outside measure, and the flue being detached, is required by — *O. London, Sept.*, 1835.

We insert this query, though we consider it much too indefinite for any useful purpose. The remainder of the same writer's letter, on hollow walls, is, in like manner, written in ignorance of what is already generally known on the subject. If O. will turn to Tredgold, *On Warming and Ventilating*, and to our *Encyclopædia of Architecture*, he will find his queries answered, and his suggestions anticipated. — *Cond.*

Cabling of Columns. — In answer to Tyro's question (p. 332.), whether the cabling or cording of columns be a modern practice, I beg to inform him that it is to be found in several ancient examples; for instance, the internal columns of the Pantheon at Rome are cabled one third of their height, and the flutes of the antæ, or pilasters, are flat eccentric curves; and the columns in the arch of Constantine are also cabled. I believe that Stuart, in his *Treatise on Ancient Architecture*, mentions several examples. — *G. B. W. London, Sept.*, 1835.

Newman's Colours, and Elliot's Instruments, I quite agree with R. V. in considering the best. — *Id.*

Boring for Water. — We should be greatly obliged to any competent reader who would draw up for us a succinct, but comprehensive, article on this subject. It can only be done by a geologist, and he will find all the requisite materials, which are chiefly French pamphlets, in the library of the Geological Society of London. Our correspondent says, "A brief narrative of the circumstances attendant on two or three of the most remarkable and most successful of its applications, and also of the greatest depths at which water has been found, would be most important, as well as very attractive, to many of your readers. In the marshes of Essex, passing through several hundred feet of blue clay, in Portsmouth Dockyard, in many parts of London, in the desert between Cairo and Suez, this beautiful improvement in wells has been adopted; and yet the public are comparatively ignorant of it." — *J. P.*

A Method of curing Smoky Chimneys. — In your first Volume, p. 234., is "A Method of curing Smoky Chimneys," by Mr. Saul; but, as I have always been taught, that "prevention is far better than cure," I should feel very much obliged if some of your readers would be so good as to enter into a detail of the various mechanical causes from which so great a nuisance arises; also to state the best way of forming flues so as effectually to prevent their smoking; and the best way of setting grates, as there is very little doubt that the way in which the grates are set operates materially either for or against the smoking of the chimney. I should like the article, or articles (the more there are of them the better, as I consider the prevention of smoky chimneys a first-rate consideration in every house), to enter into particulars and details; which will be extremely valuable to many besides — *An Occasional Surveyor. London, Oct.* 10. 1835.

Working Drawings for Bonnet Blinds. — Will any of your correspondents oblige me by giving instructions, in the shape of working drawings, of the best and simplest method of fitting up the outside sunshades (bonnet blinds, I think I have heard them called), which are so very common in the windows of good houses (facing the sun) in the neighbourhood of London? Their doing so will confer a favour on — *A Country Cabinetmaker. Hertfordshire, Oct.* 10. 1835.

BOOKS REVIEWED AND NOTICED.

General Subject.

A Historical Sketch of the Art of Sculpture in Wood, announced, 308.
A Lecture on the Preservation of Timber by Kyan's Patent for Preventing Dry Rot, 236.
Address and Regulations of the Institute of British Architects, 305.
Barlow's Report on the present State of our Knowledge respecting the Strength of Materials, 83.
Beaumont's Hints for preventing Damage by Fire, in the Construction and Warming of Buildings, 75.
Billington's Architectural Director, Part i., 82; Parts x. and xi., 185.
Britton's Dictionary of the Architecture and Archæology of the Middle Ages, 546.
Coleman's Normandy, Picardy, &c., 303.
Cust's Letter to Sir Robert Peel, on Public Buildings, &c., 180. 307.
First Annual Report of the Poor Law Commissioners for England and Wales, 511.
Foggo's Letter to Lord Brougham on the History and Character of the Royal Academy, 367.
Hartley's Account of the Invention and Use of Fire-Plates, 83.
Hope's Historical Essay on Architecture, 234. 502. 538.
Juvara's Strictures on Architectural Monstrosities, 307.
Laws and Regulations of the Architectural Society, 35. Lincoln's Inn Fields, 513.
Laxton's improved Builder's Price Book, 83.
Loudon's Arboretum Britannicum, 187.
Maceroni's Expositions and Illustrations, interesting to all those concerned in Steam Power, 304.
Nicholson's Treatise on Dialling, 235.
Rules of the Artists' Conversazione, Newcastle upon Tyne, 305.
Schinkel's Entwurfe, 81. 365.
Smith's Evolution; or, the Power and Operation of Numbers in the Statement, the Calculation, the Distribution, and the Arrangement of Quantities, Linear, Superficial, and Solid, 514.
Sopwith's Historical and Descriptive Account of All Saints' Church, in Newcastle upon Tyne, illustrated with Plans, Views, and Architectural Details, 549.
The Chairman and Speaker's Guide; being an Essay towards the brief Digest of the Rules required for orderly Conduct of a Debate, 514.
Weale's Catalogue of Works on Architecture, Building, and Furniture, 307.
Williams's Historical Sketch of the Art of Sculpture in Wood, from the earliest Period to the Present Time, 547.
Wolff's Æsthetics of Architecture, 34.

Classical Architecture.

Inwood's Resources of Design in the Architecture of Greece, Egypt, and other Countries, 36.
Jones's Athenian or Grecian Villas, 299.

Elizabethan Architecture.

Hakewill's Elizabethan Architecture, 369.

Architectural Antiquities.

Britton's History and Antiquities of the Cathedral Church of Worcester, 504.
Britton and Brayley's Palatial Edifices of Westminster, 71. 184. 234. 307. 372. 504.
Brown's View of Stonehenge, 303.
Carter's Ancient Architecture, 84.
Carter's Crosses of England, announced, 84.
Caveler's Select Specimens of Gothic Architecture, announced, 307.
Davis's Gothic Ornaments, illustrative of Prior Bride's Oratory, Abbey Church, Bath, 302.
Hakewill's South-east View of Norwich Castle, 305.
Lewis's Sketches of the Alhambra, made in the years 1833, 1834, announced, 307.
Lockwood and Cates's History and Antiquities of the Castle at Coningsburgh, in the County of York, 187.
Sketch of the South Window of Westminster Hall, with the Ruins of the House of Lords, 186.
Sopwith's Eight Views of Fountains Abbey, 235.
Taylor's View of the Remains of St. Stephen's, on the Morning after the Fire of Oct. 16. 1834, 186.
The Antiquities of Athens, announced, 307.
The Architectural Antiquities of Rome, 307.
Wallen's History and Antiquities of Little Maplestead Church, Essex, announced, 307.
Willis's Remarks on the Architecture of the Middle Ages, especially of Italy, 234. 297.
Winkles's Illustrations of the Cathedral Church Salisbury, 184.

Modern Domestic Architecture.

Faulkner's Designs for Mural Monuments, Monumental Tombs, and Chimney Pieces, 185.
Goodwin's Cottage Architecture, 301.
Wild's Art of Building Cottages and Houses for the Humbler Classes, 71.

Views of Buildings and Buildings recently completed.

New Cemetery of Frankfort on the Maine, 135.
Plans, Elevations, Sections, Details, and Views of the splendid Church of Batalha, Portugal, announced, 307.
Town and Davis's Elevation and Ground Plan of the newly erected Custom-House, New York, 303.
View of the Great Saloon in the Pantheon from the North Gallery, 186.

Ornaments, chiefly for Fittings-up, Furniture, and Finishing.

A Compilation of splendid Ornamental Designs from Foreign Works of Recent Production, 84.
Abraham's Organ Screen of York Cathedral, announced, 85. 515.
Bielefield's Ornaments, from Examples executed in the improved Papier Mâché, 40. 371.
Crofton's London Upholsterer's Companion, 42.
King's Cabinetmaker's Sketch Book, 304.
Pugin's Designs for Gold and Silver Smiths, announced, 308.
Pugin's Designs for Iron and Brass Work, announced, 308.
The Cabinetmaker's Sketch Book of plain and useful Designs, 512.

Local Architecture.

Britton and Brayley's Address to the Commissioners appointed by His Majesty to examine and report on the Designs for the proposed new Houses of Parliament, 504.
Cust's Thoughts on the Style of Architecture to be adopted on Rebuilding the Houses of Parliament, 307.
Ferrey's Answer to Thoughts on Rebuilding the Houses of Parliament, 509.
Hakewill's Thoughts upon the Style of Architecture to be adopted in Rebuilding the Houses of Parliament, 506.
Pugin's Letter to A. W. Hakewill, Architect, in Answer to his Reflections on the Style for Rebuilding the Houses of Parliament, 507.
Walker's Three Perspective Views taken from the Points specified by the Select Committee on Rebuilding the Houses of Parliament, 515.

Engineering.

Lardner's Steam Engine explained and illustrated in a familiar style, 308.
Matthews's Historical and Descriptive Account of the Water-Works of London, &c., announced, 307.
Sopwith's Mining Districts of Alston Moor.

GENERAL INDEX.

Abattoirs at Islington, 144.
Æsthetics of architecture, &c., 34.
Air-trap to drains, 179. 330.
Alms-houses erecting near London, 465.
American architecture, remarks in reference to, 190.
Antique monuments in the town of Azan, Phrygia, 463.
Aqueduct of Lisbon, 87.
Arboretum Britannicum, use of, to architects, 187.
Arbroath pavement, 379.
Arch, the origin of, 540.
Archæological and Topographical Institution of Great Britain, 464.
Architect, the studies and qualifications necessary for, 99.
Architect and Surveyor, strictures on the professions of, 318.
Architects and Amateurs, the comparative merits of, with regard to competition plans, 197.
Architectural design as affecting the inferior arts connected with building, 3.
Architectural exhibition at Somerset House, 313.
Architectural maxims, 33. 179.
Architectural opinions of Forsyth, 148. 243. 293. 322. 468.
Architectural parallels, 49.
Architectural representations, modes of, 452. 534.
Architectural Society, Yorkshire, projected, 319.
Architecture, unity of system in, 1. 97; external ornaments employed in, 15; of the resources of design in the, of Greece, Egypt, and other countries, 36; art considered with reference to, 58; Carter's ancient, reprinted, 84; of the Middle Ages, symbolical, 85; on the origin, excellencies, and defects of the Grecian and Gothic styles of, 105. 154. 204. 250. 336. 384. 445; domestic, in the different countries on the continent of Europe, 111; Gothic, 154; Norman, the long duration of, 188; the importance of, 193; of the middle ages, notice of, 234; the necessity of concord in, with reference to the production of a whole, 241; the origin and nature of the Egyptian style of, 538; of the Greeks, origin of, 539; habits and religion, influence upon, 539; character of the different orders of, 540; affected by natural and adventitious circumstances; of the middle ages, especially of Italy, 297; Goodwin's Domestic, 331; conveniency in, 333; the reviving taste for pointed, 342; illustrations of Elizabethan, 369; critique on remarks on, 470; of the middle ages, the classification and details of, 430; historical essay on, 502; decay of, among the Greeks, and progress of, among the Romans, 541; means for teaching the public some lessons in, 552.
Armagh Cathedral, 45.
Artificial stone, name of a manufacturer of, 44; ornaments manufactured in, 123; a new composition for the manufacture of, 464.
Assize Courts at Devizes, tenders accepted for the erection of, 93.
Bakewell's bricks, 93.
Bank of England, new office in, query respecting, 428.
Bath, improvements in the Abbey church at, 91. 139; alterations in Rivers Street and Bennet Street at, 92; new road from, to Warminster, 92; road from Bathwick to Stoke, 92.
Bell towers and steeples, 126. 448.
Billington's Architectural Director, noticed, 185.
Birmingham New Town Hall, 16. 48. 237. 325.
Blackfriars Bridge, a remark on, 428.
Blunt and Stephenson's work, hints for a critique on, 47; query respecting, 428.
Bonnet blinds, query respecting, 560.
Boring for Water, query respecting, 560.
Bridge at Willington, plans, &c., wanted for the building of, 91.
Builder's Price Book, improvements in, 83.
Building, old Fuller's ideas on, 485.
Buildings, errors in altering or adding to, 249.
Cabinetmaker's Sketch Book remarks on, 304. 512.
Carpet manufacture, improvements in, 551.
Cast-iron beams, suggestions respecting, 138.
Castle at Coningsburgh, antiquities of, 187.
Cathedral church of Salisbury, illustrations, of noticed, 184.
Cathedrals, exterior and interior views of, 303.
Cemetery to be formed at Gateshead, 91; new one at Frankfort, 135; one intended to be formed at Preston, 317; one projected at Worcester, 468.
Centre, original design for, 58.
Chain bridge, 161; fall of one on the Duke of Buccleuch's estate, Scotland, 475.
Chimney pipe, or pot, for preventing smoke, 63; another method for, 496.
Church erecting at Bude in Cornwall, 44; designs for three at Potsdam, and four at Berlin, 81; one nearly completed at Cossey, 91; one erected at Chepham, 93; one erecting in the country, remarks on, 93; warming of, 240; one lately erected at Kingstown, Ireland, 428. 524; one to be built at Islington, 464; one to be erected in Vincent's Square, Westminster, 467; one to be erected in Regent's Park, 518; of All Saints', Newcastle upon Tyne, a historical and descriptive account of, 549.
Coldness of the feet of persons, query respecting, 96.
Colours and drawing instruments, 48. 332. 560.
Column to be erected at Truro, 137.
Competition plans, remarks on, 12. 143. 283. 325. 374. 376. 481. 484.
Concealed washhand stand, 309.
Concrete, on the uses of, 62.
Cooking apparatus, by gas, 90; by water and some other substance, 136.
Cooking range, a new description of, 44; descriptive account of, 64.
Cooling and ventilating in warm climates, 308.
Cottage architecture, 301.
County hall for Middlesex, 88.
Crosses of England, 84.
Cust's letter to Sir Robert Peel, on public buildings, 180.
Custom-House, New York, remarks on the lithographs of, 304; improvements lately made at, 522.
Cyclopean cottage, an account of, 533.
Dean Forest, notice of the survey of, 518.
Decayed flooring and partitions, mode of securing of, 165; remarks on, 329.
Designs for private houses, suggestions respecting, 192.
Dictionary of the architecture and archæology of the middle ages, remarks on, 546.
Discrepancy between the estimate and cost of a building, 358. 402.
Dissenters' places of worship, 192.
Distribution of premiums, critique on, 229. 493; for an essay on concrete, 466.
Door, air-tight, query respecting, 48; a double, 48. 400; a spring for one which opens both ways, 553.
Double door for a room, 400.

Drawings of ancient domestic architecture, Mr. Britton's remarks on, 424.
Dry rot, preservation of timber from, 236. 332. 361.
Durand, obituary of, 284.
Edinburgh Royal Institution, 319.
Egyptian oven, description of, 177.
Emigrants, useful instructions to, 71.
Encyclopædia of Cottage Architecture, effects produced by, in Ireland, 138.
Exeter Athenæum, 48.
Experiments on timber, remarks on, 83.
Fine arts among the manufacturing population, proposition for extending a knowledge of, 463.
Fire, hints for preventing damage by, 75.
Fireproof buildings, query respecting, 284. 380.
Fluted Corinthian columns, query respecting, 332; answer, 560.
Footpaths in the neighbourhood of large towns, suggestions for the improvement of, 134.
Fountains Abbey, views of, noticed, 235.
Foxley House, remarks on, 467.
Freezing of water in pipes used for heating, 96.
Gas lights, hints for the contractors for, 500.
Gauge for ascertaining the quantity of liquor in a cask, 500.
Geneva, improvements in the town of, 87.
German fireplaces, 144. 240.
Glamorgan and Monmouth Infirmary, the foundation stone laid of, 316.
Goodwin, Francis, obituary of, 476.
Gothic architecture, elements and principles of, 214.
Gothic ornaments illustrative of Prior Bride's Oratory, in the Abbey church, Bath, remarks on engravings of, 302.
Guildhall and market-place to be erected at Helston in Cornwall, 44.
Habitations in the manufacturing districts, remarks respecting, 316.
Hall and courts of law, Worcester, being erected, 282.
Heating by air-flues, query respecting, 560.
Heating by gas, remark respecting, 552.
Heating by hot water, origin and progress of, 31; remarks in respect of, 308; comparative advantages and disadvantages of the different systems of, 407. 473. 474. 522.
House fly, Italian mode of excluding the, 188.
Houses of Parliament, temporary reconstruction of, 44. 136; history of those destroyed, 71. 184. 372. 504; report on the rebuilding of, 311; remarks on the resolutions adopted by the Committee for the rebuilding of, 381; published plan of the site of, 464; suggestions respecting, 466; address to the Commissioners appointed to report on the designs, 504; thoughts on the style to be adopted in the rebuilding of, 506; letter respecting the rebuilding of, 507; answer to "thoughts" on the rebuilding of, 509; the propagation of sound in, 517.
Houses of the Britons, 144.
Huskisson's monument, correction of remarks on, 240.
Improvement of the metropolis, remarks on the plans for, 281.
Indigent blind, school for, in progress, 466.
Institute of British architects, address and regulations of, 305. 470. 513; opening meeting of, 309; critique on, 373; the last ordinary meeting of, 423; pamphlet published by, 464; remarks on the critique on the regulations of, 555.
Instrument for drawing, notice of, 281.
Intercolumniation, Wolff's ideas on, 308.
Iron Wharfs, a description of, in the *Encyc. Metrop.*, 475.
Isometrical projection, and isometrical drawing, 45. 142. 211. 519.
Keys of German silver, 44.
Lamb's villa, a critique on, 377; reply to, 425.
Lecture room, query respecting, 95.
Levelling of Holborn Hill, a meeting respecting, 466.
Literary compositions of architects and surveyors, 470. 554.
Locomotive engines, a treatise on, 516.
Mechanics' Institution to be built at Liverpool, 317; description of, 467.
Meeting-house near Belfast, Description of, 518.
Metalic Saddle for the external doors of dwelling houses, 493.
Method for supplying dogs with water, 499.
Milestone, an idea for one, 536.
Mining Districts of Alston Moor, &c., remarks on the account of, 304.
Monument on Bromsgrove Lickey, remarks on the description of, 94; to Alderman Waithman, description of, 94; to Sir Walter Scott, design for, 320; to Thomas Telford, Esq., 517.
Morgan's Patent Self-feeding Apparatus for Heating, query respecting, 95; answered, 95.
Movable Kitchen, 86.
Mural monuments, tombs, and chimney-pieces, designs for, noticed, 185.
National Gallery, critique on, 89.
Natural History Museum, and County Court building at Worcester, 468.
New Corn Exchange, Manchester, to be erected, 282. 326.
New County Hall at Hereford, query respecting, 476.
New Library, Cambridge, proposed to be built, 282.
New School for the education of the deaf and dumb in contemplation, 282.
Newcastle and Carlisle railway, 318.
Norwich Castle, repairs of, 91; engravings of, 303.
Organ Screen of York Cathedral, 85, 515.
Ornamental designs to assist the artist and decorator, 84.
Painting and papering the walls of apartments, the comparative advantages of, 362.
Palladio, remarks on, 202. 328. 468.
Pantheon, Great Saloon, view of, 186.
Paper for rooms, a new sort of, 498.
Papier maché, ornaments in, 40, 371.
Paris, La Madeleine, the near completion of, 86; railroad from, to London, 86; statues on the triumphal arch in the Place de Carrousel, 87; statues of the Porte de la Concorde, 87; monument of the Duke of Berri, 87.
Park forming at Preston, Lancashire, for the use of the public, 316.
Patent Stove Grate, query respecting, 284.
Paving streets with blocks of wood, query respecting, 428; answer, 428.
Penzance Guildhall and Markets, noticed, 138.
Perspective Delineator, on the use of, 439; critique on, 557.
Philosophical Society, Edinburgh, 283.
Pier at Woolwich, about to be erected, 282.
Poor Law Commissioners, first annual report of, 511.
Portland Stone, strictures on the painting of, 315.
Portuguese architects, 140.
Practical carpentry, suggestions respecting, 192.
Prince William's Palace, Berlin, the building of, 189. 239.
Projection, 477.
Public Granary to be erected in Salisbury, 282.
Righting a tower, 91.
Roman walls, construction of, 191, 280.
Roof, one of the largest span, at Moscow, 192; new mode of forming a tie for, 496.
Roof suitable for the Birmingham Town Hall, query respecting, 380.
Roof tie, new mode of forming of, 496.
Rooms, plans for, adapted to houses where a corner is curved off, 56. 393. 475; the proper arrangement of, in a dwelling-house, 228. 275. 348. 404. 228. 275. 327. 348. 404.
Royal Academy, a letter to Lord Brougham on the history and character of, 367.
Rules of the Artists' Conversazione, of Newcastle upon Tyne, 305.
Russia, cottages of, 112; farm-houses of, 116; country inns of, 116; villas of, 117; mansions of, 118; villages and towns of, 120; street houses, of, 120; town inns of, 121; shops in towns of, 121.
Schinkel's Entwurfe, 81. 365.

Sculpture in wood, sketch of the art of, 547.
Shop fronts, improvement of, 498.
Smoke in towns, the nuisance of, 462.
Smoky chimneys, query respecting a method of curing of, 560.
Soane's Architectural Museum, remarks on, 247. 378. 424.
Soil of the New Cut, &c., method employed in excavating and removing, 501.
St. John's Market, Liverpool, 129.
St. Sepulchre's Church, repairing of, 466.
Stenciling, instead of penmanship, for the writing on plans, 85.
Stone, expansibility of different kinds of, 517.
Stone planing machine, 283, 331.
Stove for heating by gas, 90.
Street architecture, remarks on, 389. 524.
Street houses of the city of New York, 490.
Streets of Frome lighted with gas, 93.
Strength of materials, pamphlet on, 191; remarks on, 389. 472.
Stuart's Athens, republication of, 307.
Surgeons' College, Lincoln's Inn Fields, 190. 556.
Suspension bridge, at Freyburg, 87.
Tale of a clergyman and architects, 138.
Taste, on the principles of, with reference to architecture and the fine arts generally, 7.
Theatre to be erected in King Street, St. James's, 424; one in progress in Norton Folgate, 466.
Truss of a roof of large span, design for, 536.
Turnpike lodge, 159, 475.
Upholsterer's work, modern methods in, 42.
Utility, the principles of, as governing the applications of columns, 285.
Varden, Richard, remarks respecting, 282.
Ventilation of public rooms and dwelling-houses, critical remarks on, 27. 460. 558.
Villa in the style of architecture of the thirteenth century, design for, 257; Athenian, designs for, 299.
Warwick Vase in the Pantheon Bazaar, 465.
Water conveyed in tubes by the Romans, 94.
Waterproof casement, 133.
Watt Institution, Dundee, 45.
Well of the village of Waterbeach, 315.
Window of Westminster Hall, and ruins of the House of Lords, notice of sketches of, 186; St. Stephen's Chapel, view of the ruins of, 186
Windows, consistency of style as regards, &c., 145.
Wring duke, description of the use of, 189.

END OF THE SECOND VOLUME.

LONDON:
Printed by A. SPOTTISWOODE,
New-Street-Square.